

Final Environmental Assessment
Utah Coal and Biomass Fueled Pilot Plant
Kanab, Utah

DOE/EA-1870

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Cover Sheet**Responsible Agency:** U.S. Department of Energy**Title:** Final Environmental Assessment for the Utah Coal and Biomass Fueled Pilot Plant (DOE/EA-1870)**Location:** Kanab, Utah**Contacts:**NEPA Information:

Joseph Zambelli
NEPA Document Manager
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road, P.O. Box 880
Morgantown, WV 26507-0880
304-285-4913; 304-285-4403 (fax)
joseph.zambelli@netl.doe.gov

Project Information:

Darryl Shockley
Project Manager
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road, P.O. Box 880
Morgantown, WV 26507-0880
304-285-4697; 304-285-4216 (fax)
darryl.shockley@netl.doe.gov

Abstract:

The U.S. Department of Energy (DOE) prepared this Environmental Assessment (EA) to evaluate the potential impacts of providing financial assistance to Viresco Energy, LLC, (Viresco) for its construction and operation of a Coal and Biomass Fueled Pilot Plant, that would be located in Kanab, Utah. The plant would be located on land leased to Viresco by the Utah School and Institutional Trust Lands Administration. The Pilot Plant would occupy approximately 1.5 acres of a 10-acre site located approximately 2.5 miles south of the downtown area of Kanab, Utah.

The Fiscal Year 2010 Appropriations Act for Energy & Water Development and Related Agencies (Public Law 111-85) included a \$2,500,000 earmark sponsored by then Senator Bennett of Utah for the "Utah Coal and Biomass Fueled Pilot Plant." In accordance with the earmark, DOE would provide financial assistance to Viresco to support its design, construction, and testing of a pilot-scale steam hydrogasification facility. Under a cost-sharing agreement, DOE would provide \$2,404,000 (approximately 80 percent of the total cost of the research and development project) and Viresco would contribute the remaining \$601,000. The Pilot Plant would be constructed, owned, and operated by Viresco. Viresco is responsible for obtaining the permits and other authorizations needed for the project; DOE would have no regulatory authority over the project or its operation. Under the cooperative agreement, Viresco would operate the Pilot Plant and collect data for a series of test runs totaling 30 days of operation over a period of months; after DOE's financial assistance ends, Viresco plans to seek additional funding for continued operations.

The objective of Viresco's proposed project is to conduct a pilot-scale evaluation of the Steam Hydrogasification Reaction (SHR) process. The Pilot Plant would be a small-scale facility designed to evaluate the technical feasibility of using steam hydrogasification to convert coal and biomass (such as agricultural or wood processing waste) into synthesis gas (syngas), and ultimately into clean fuels such as substitute natural gas, sulfur-free Fischer-Tropsch diesel, jet fuel, dimethyl ether, and methane. The successful operation of this SHR gasification technology at a pilot scale would provide engineering information needed to develop a commercialization pathway for this process. This project supports DOE's goal of developing and using domestic coal and renewable resources in an efficient and environmentally acceptable manner. This technology uses an advanced gasification process and produces clean fuels. The addition of biomass to the coal feedstock also reduces net greenhouse gas (GHG) emissions.

The EA found that the most notable potential changes from Viresco's proposed project would occur in the following areas: land use, aesthetics, air quality, solid and hazardous wastes, utilities, and socioeconomics. No significant environmental effects were identified in analyzing these potential changes.

Public Participation:

DOE encourages public participation in the National Environmental Policy Act (NEPA) process. Based on early local interest in the project, the DOE's public involvement effort for the Utah Coal and Biomass Fueled Pilot

Plant EA was more extensive than usually undertaken for an EA. The effort included a public scoping meeting in Kanab, as well as outreach to federal, state, and local agencies; Native American tribes; and members of the public. DOE consulted with the U.S. Fish and Wildlife Service (USFWS), the Utah Department of Natural Resources (UDNR), Division of Wildlife Resources, and the State Historic Preservation Office (SHPO) for compliance with federal regulations, and also consulted with the Kaibab Band of Paiute Indians and the Hopi tribe.

The Draft EA was released for public review and comment in August, 2011; a public hearing was held in Kanab on August 30; and a tribal community meeting was held at the Kaibab Paiute Tribal Headquarters in Pipe Spring, Arizona, on August 31. The public was invited to provide oral, written, or e-mail comments on the Draft EA to DOE by the close of the comment period on September 16, 2011. Copies of the Draft EA were also distributed to cognizant federal, state and local agencies; Native American tribes; and organizations. All comments, including late comments received after the close of the comment period, were considered in preparing this Final EA for the proposed DOE action. The EA was revised where appropriate to address comments as well as incorporate data that became available after the Draft EA was issued. Additions and revisions to the text are presented in italics and underlined. Public comments received on the EA and DOE responses are provided in Appendix E. The EA is also available on the DOE website at: <http://www.netl.doe.gov/publications/others/nepa/ea.html>.

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ACRONYMS AND ABBREVIATIONS

AQCR	Air Quality Control Region
AQCR 014	Four Corners Interstate Air-Quality Control Region
<u>ASME</u>	<u>American Society of Mechanical Engineers</u>
<u>BLM</u>	<u>Bureau of Land Management (Federal)</u>
BMP	Best Management Practice
CAA	Clean Air Act
CX	Categorical Exclusion
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
DAQ	Division of Air Quality
dBA	Decibel, A-weighted scale
DOE	Department of Energy
EA	Environmental Assessment
EIS	Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
GHG	Greenhouse Gases
gpd	gallons per day
HAP	Hazardous Air Pollutant
HDPE	High Density Polyethylene
kW	kilowatts
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NETL	National Energy Technology Laboratory
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSPS	New Source Performance Standards
NSR	New Source Review
NWI	National Wetland Inventory
OSHA	Occupational Safety and Health Administration
PM ₁₀	particulate matter less than 10 microns in diameter
PM _{2.5}	particulate matter less than 2.5 microns in diameter
ppm	parts per million

PSD	Prevention of Significant Deterioration
<i>RMP</i>	<i>Risk Management Program</i>
ROD	Record of Decision
SHPO	State Historic Preservation Office
SHR	Steam Hydrogasification Reaction
SIP	State Implementation Plans
SITLA	School and Institutional Trust Lands Administration
SPCC	Spill Prevention, Control, and Countermeasures Plan
SWPPP	Stormwater Pollution Prevention Plan
tpd	tons per day
tpy	tons per year
UDEQ	Utah Department of Environmental Quality
UCR	University of California, Riverside
USC	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VOC	volatile organic compound

1.0 PURPOSE AND NEED

1.1 Introduction and Background

DOE prepared this Environmental Assessment (EA) in accordance with the NEPA of 1969, as amended (42 United States Code [USC] 4321 *et seq.*); the Council on Environmental Quality (CEQ) Regulations (Title 40, Code of Federal Regulations [CFR], Parts 1500-1508); and the DOE's NEPA Implementing Procedures (Title 10, CFR, Part 1021). The EA evaluates DOE's proposed action of providing financial assistance to support the construction and operation of a Coal and Biomass Fueled Pilot Plant that would be located in Kanab, Utah (hereafter referred to as the "proposed project" or the "Pilot Plant"). The Pilot Plant would convert wet carbonaceous feedstocks such as coal and lignocellulosic biomass into synthesis gas (syngas) suitable for further processing to liquid fuel or to substitute natural gas.

Lignocellulosic biomass: plant biomass that is composed of cellulose, hemicellulose, and lignin. The carbohydrate polymers (cellulose and hemicelluloses) are tightly bound to the lignin. Lignocellulosic biomass can be grouped into four main categories: agricultural residues (including corn stover and sugarcane bagasse), dedicated energy crops, wood residues (including sawmill and paper mill discards), and municipal paper waste.

Synthesis Gas: a mixture of carbon dioxide, carbon monoxide, and hydrogen made by using water gas and reacting it with steam to enrich the proportion of hydrogen.

The Fiscal Year 2010 Appropriations Act for Energy & Water Development and Related Agencies (Public Law 111-85) included a \$2,500,000 earmark sponsored by then Senator Bennett of Utah for the "Utah Coal and Biomass Fueled Pilot Plant." In accordance with the earmark, DOE would provide financial assistance to Viresco Energy, LLC (Viresco) to support its design, construction, and testing of a pilot-scale steam hydrogasification facility. Under a cost-sharing agreement, DOE would provide \$2,404,000 (approximately 80 percent of the total cost of the research and development project) and Viresco would contribute the remaining \$601,000. The Pilot Plant would be constructed, owned, and operated by Viresco. Under the cooperative agreement, Viresco would operate the Pilot Plant and collect data for a series of test runs totaling 30 days of operation over a period of months; after the DOE's financial assistance ends, Viresco plans to seek additional funding for continued operations. These operations would be limited by the funding available and the conditions of permits and would probably not exceed 130 days of operation in any year, including a possible 90-day continuous test run. The Pilot Plant would be decommissioned and the site restored no later than the end of the site lease period. The City of Kanab would be responsible for the supply of water (used in feedstock for the gasifier) to the Pilot Plant and disposal of the sanitary wastewater. Viresco would be responsible for the disposal of the solid waste (i.e., coal ash) and the process wastewater from the Pilot Plant.

The purpose of this EA is to determine whether DOE's proposed action or the project would cause significant adverse impacts to the environment. If potentially significant adverse impacts are identified and, if they cannot be mitigated or avoided, then a more detailed Environmental Impact Statement (EIS) would be required. If no significant impacts are identified, a Finding of No Significant Impact (FONSI) would be prepared by DOE and made available to the public before DOE provides funds for construction (see Section 1.3 for a more detailed discussion on the NEPA process).

This EA follows the organization recommended by the CEQ regulations (40 CFR, Parts 1500-1508) and includes the following sections:

- Section 1 – Purpose and Need
- Section 2 – Description of Proposed Action and No Action Alternative
- Section 3 – Existing Conditions and Environmental Consequences
- Section 4 – Cumulative Impacts
- Section 5 – Short Term Uses vs. Long Term Productivity
- Section 6 – References
- Section 7 – List of Preparers

- Section 8 – Distribution List
- Appendices A through E

1.2 Purpose and Need for DOE Action

The purpose and need for DOE's action is to comply with the Congressional earmark in the Fiscal Year 2010 Appropriations Act and its accompanying Conference Report (Conf. Rep. 111-278 (September 30, 2009)). The technology that would be demonstrated at a pilot scale would also contribute to the goal of producing fuels using domestic renewable energy resources. The National Energy Technology Laboratory (NETL) is a part of DOE's national laboratory system. NETL is dedicated to the research, development, and technology transfer for fossil energy, renewable energy, and energy efficiency technologies. NETL supports DOE's mission to advance the national, economic, and energy security of the United States, enabling domestic coal, natural gas, and oil to economically power our Nation's homes, industries, businesses, and transportation, while protecting our environment and enhancing our energy independence.

Viresco has been involved in the funding and development of a gasification technology conceived by the University of California, Riverside (UCR) College of Engineering's Center for Environmental Research and Technology. This gasification technology is based on the SHR process (utilizing both steam and hydrogen for the production of synthesis gas from coal or other gasifier feedstocks). UCR and Viresco have conducted research on this gasification technology in a laboratory-scale batch process and the results indicate that this technology has the potential to be a commercially viable means to produce fuels using domestic resources. A system analysis study of the technology concluded that the process proposed by Viresco has the potential to reduce capital costs and achieve higher conversion efficiencies compared to conventional, partial oxidation-based gasification processes. The next step in development of this technology is to evaluate the process at a larger scale (i.e. pilot scale).

The objective of Viresco's proposed project is to conduct a pilot-scale evaluation of the SHR process. The Pilot Plant would be a small-scale facility designed to evaluate the technical feasibility of using steam hydrogasification to convert coal and/or biomass into syngas, and ultimately into clean fuels such as substitute natural gas, sulfur-free Fischer-Tropsch diesel, jet fuel, dimethyl ether, and methane. Hydrogasification causes wet coal and other biomass to react with hydrogen at high temperature and pressure to produce syngas. The biomass feedstock would consist of woody waste from southern Utah. Woody waste may consist of tree limbs, tops, roots and foliage, as well as wood wastes from urban areas (e.g., construction wood, tree trimmings) and products derived from trees such as lumber, paper and byproducts of wood manufacturing (e.g., sawdust and bark). The Pilot Plant would not directly combust coal or biomass. Instead, the feedstock (coal with or without biomass) would be gasified and the char produced from the gasification process would be combusted in the regeneration step. All operations at the proposed facility would be on a testing scale; there would be no full-scale production of fuels derived from processing of the syngas generated in the gasification process or storage of such fuels at the site.

The successful operation of this SHR gasification technology at pilot scale would provide engineering information needed to develop a commercialization pathway for this process. This project supports NETL's goal of developing and using domestic coal and renewable resources in an efficient and environmentally acceptable manner. This technology uses an advanced gasification process and produces clean fuels. The addition of biomass to the coal feedstock also reduces net greenhouse gas (GHG) emissions.

1.3 National Environmental Policy Act and Related Procedures

DOE prepared this EA in accordance with the NEPA, as amended (42 USC 4321), and the President's Council on Environmental Quality regulations for Implementing the Procedural Provision on NEPA (40 CFR 1500-1508). NEPA requires that a federal agency proposing a federal action must:

- Assess the environmental impacts of any proposed action;
- Identify adverse environmental effects that cannot be avoided, should the proposed action be implemented;
- Evaluate alternatives to the proposed action, including a no action alternative; and

- Describe the cumulative impacts of the proposed action and other planned projects in the area of the site.

NEPA requires federal agencies to take into account the potential consequences of their actions on both the natural and human environments as part of their planning and decision-making processes. To facilitate these considerations, a number of typical actions that have been determined to have little or no potential for adverse impacts are “categorically excluded” from the detailed NEPA assessment process. Thus, the first step in determining if an action would have an adverse effect on the environment is to assess whether it fits into a defined category for which a Categorical Exclusion (CX) is applicable. If a CX is applied, the agency prepares a record of categorical exclusion to document the decision and may proceed with the action.

For actions that are not subject to a CX, the agency prepares an EA to determine the potential for significant impacts. If through the evaluation and analysis conducted for the EA process, it is determined that no significant impacts would occur as a result of the action, then the agency prepares and issues a FONSI. The NEPA process is complete when the FONSI is executed.

If significant adverse impacts to the natural or human environment are indicated or other intervening circumstances exist either at the onset of a project or if determined through the EA process, an EIS may be prepared. An EIS is a more intensive study of the effects of the proposed action and requires more rigorous public involvement. The agency formalizes its decisions relating to an action for which an EIS is prepared in a Record of Decision (ROD). Following a 30-day waiting period after publication of the ROD in the *Federal Register*, the NEPA process is complete (see Figure 1-1 for a flow chart of the NEPA Process).

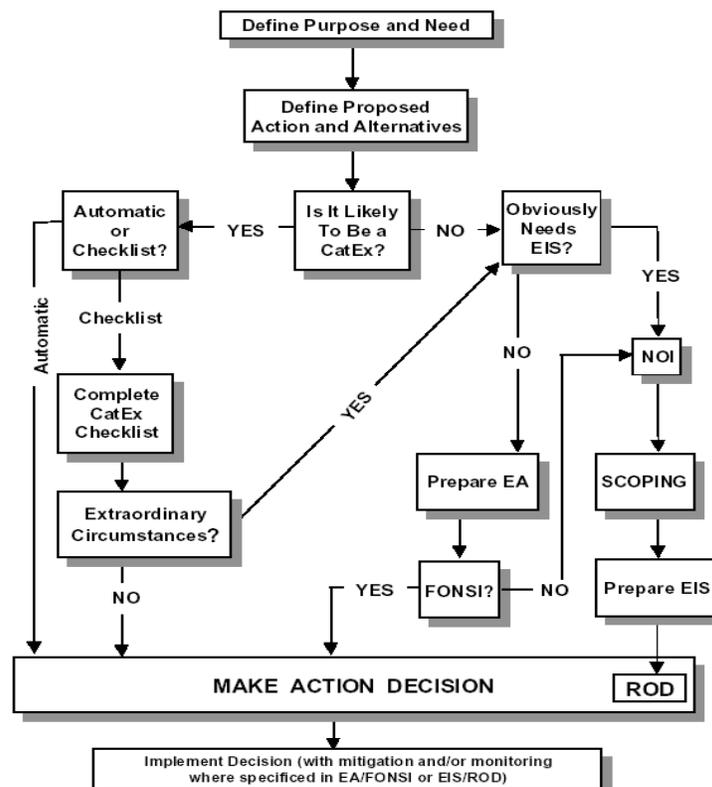


Figure 1-1. The NEPA Process

1.4 Scoping for the Environmental Assessment

1.4.1 Public Scoping and Agency Consultation

Based on early local interest in the project, the public involvement effort for the Utah Coal and Biomass Fueled Pilot Plant EA was more extensive than usually undertaken for an EA. DOE received comments about the proposed Pilot Plant from 99 members of the public before the EA was initiated. Additionally, the Environmental

Program Manager for the Kaibab Band of Paiute Indians contacted the DOE NEPA Document Manager in January 2011, before the EA was initiated, stating that the tribe was concerned about the project and requested to be consulted on DOE’s action. In February 2011, the tribal representative explained that the Kaibab Band’s level of concern resulted from the discovery of Native American remains during construction at the Jackson Flat Water Supply Storage Project, which is located approximately 0.25 mile north of the proposed Pilot Plant site. As a result of the enhanced local interest, DOE chose to initiate a public scoping process comparable to one normally conducted for an EIS.

The public scoping process included the scheduling of a public scoping meeting in Kanab (Figure 1-2), as well as outreach to federal, state, and local agencies; Native American tribes; and members of the public. DOE sent notices (see examples in Appendix A) to these organizations and individuals informing them of the meeting and inviting them to comment on the proposed project and the scope of the EA. DOE also initiated contact with the U.S. Fish and Wildlife Service (USFWS), the Utah Department of Natural Resources (UDNR), Division of Wildlife Resources, and the State Historic Preservation Office (SHPO) for consultation under Section 7 of the Endangered Species Act and Section 106 of the National Historic Preservation Act (NHPA). Copies of letters and responses are included in Appendix A. Additionally, DOE sent staff-to-staff-level consultation letters on May 6, 2011 to 17 Native American tribes in the region based on a database maintained by the U.S. Department of Interior. In addition to the Kaibab Band, which had already contacted DOE, the Hopi and Navajo tribes expressed an interest in coordinating with DOE on the proposed project. The Hopi requested a copy of the cultural report completed in 2010 for the proposed project site and, after reviewing the report, the Director of the Hopi Cultural Preservation Office sent a response in a letter dated June 6, 2011 stating that the proposed project is unlikely to affect cultural resources significant to the tribe (see Appendix A). The Navajo responded in a letter dated July 5, 2011, noting that the proposed project would not impact traditional cultural resources but also asked that they be notified if cultural resources of significance are discovered onsite during construction. In aggregate, the public scoping distribution included 80 notices sent by U.S. Mail and 84 notices distributed by email.



Figure 1-2. Scoping Meeting, May 18, 2011 at Kanab Middle School

DOE held a public scoping meeting on May 18, 2011 at the Kanab Middle School cafeteria in Kanab, Utah, which was attended by 129 people. DOE published notices in two regional newspapers (Southern Utah News and The Spectrum) on May 8th, 11th, and 18th announcing the meeting location and time. The scoping meeting began with an informal open house from 5:00 pm to 7:00 pm, during which time attendees were able to view project-related posters and ask questions of DOE and Viresco representatives. The informal open house was followed by formal presentations given by DOE and Viresco and then the formal comment period, all of which

were transcribed by a court reporter. Oral comments were made by 21 individuals at the scoping meeting. The public scoping period ended on June 17, 2011, after a 30-day comment period.

In conjunction with the public scoping meeting in Kanab, DOE made arrangements to meet with the Kaibab Band at their monthly Council Meeting on May 19, 2011 and sent all presentation items to the tribe prior to the meeting as requested. The meeting was attended by two DOE representatives, including the NEPA Document Manager for the EA. At the meeting, council members expressed their dissatisfaction that a DOE Tribal Liaison representative and the DOE Technical Project Manager were not in attendance. Council members were also offended that DOE had scheduled the public meeting before meeting with the tribe, and they disagreed with DOE's presentation at the public meeting, which implied that formal consultation had been initiated with the tribe. The Kaibab Band subsequently sent a letter to DOE, dated June 13, 2011 (Appendix A), reiterating the concerns expressed at the Tribal Council Meeting and outlining their environmental concerns about the proposed project. DOE responded to the Kaibab Band's concerns by initiating formal government-to-government consultation with attendance at a Tribal Council meeting on July 21, 2011. DOE also followed up with a letter dated August 1, 2011, to the Tribal Council (see Appendix A).

DOE representatives attending the Kaibab Band Tribal Council on July 21, 2011 included the Director for Tribal and Intergovernmental Affairs, a Senior Program Analyst, the Project Manager, and the NEPA Document Manager. Council members requested that DOE provide a written statement retracting the comment noted on one of the slides shown to the citizens of Kanab during the May 18th scoping meeting presentation stating that consultation with the Kaibab had already begun. They also expressed their desire to engage in a written agreement outlining how the Kaibab could be an active participant in the decision process regarding any unanticipated discovery of cultural resources, artifacts, human remains, or burial sites, should such be located onsite during construction. In addition, they asked to be granted access to the site and that they be provided with periodic updates on the project's status and progress.

Council and tribal members provided additional scoping comments that included: 1) a request that an EIS be prepared due to the project's potential for causing environmental impacts that could destroy their land; 2) a concern about the potential for impacting previously undiscovered burial grounds that may be located on the proposed project site; and 3) a concern that radioactive particles would be released into the air by burning coal in the proposed Pilot Plant. The Kaibab Band also provided DOE with a list of culturally significant plants and animals, requesting that they be taken into consideration in preparation of the environmental analysis.

Charley Bullets of the Southern Paiute Consortium expressed numerous concerns about the proposed project and provided the following scoping comments: 1) that the increasing number of federal projects in the desert southwest are having adverse impacts on water demand and supplies; 2) that the water stored in the Jackson Flat Reservoir project will be used for the coal gasification Pilot Plant and not for irrigation and recreation, as originally planned; 3) that the proposed project's emissions will generate pollution, which will adversely impact medicinal plants that grow in the area; 4) that DOE and other Federal Government agencies need to improve their communication with the tribes and provide regular meeting updates; 5) that he is opposed to the proposed coal gasification project's current location and believes the site was selected due to its proximity to nearby surface mines, which would provide the coal; 6) that different government offices often provide inconsistent information or offer different stories when contacted; 7) that the Kaibab are very unhappy that cultural resources and burial sites were disturbed at the nearby Jackson Flat Reservoir project; and 8) that Water to Tribes is a living Breathing element and like all things living if it's abused it will show us it's Strength.

In response to the Kaibab Tribal Council's request for a written retraction, the DOE sent Chairman Manuel Savala a letter on August 1, 2011, expressing their regret that previously noted statements incorrectly implied that formal government-to-government consultation had occurred prior to the public meeting on May 18, 2011 (Appendix A). DOE intends to continue consultation with the Kaibab Band throughout the NEPA process.

DOE also received scoping comments from an attorney representing the Taxpayer Association of Kane County, which informed DOE that a legal petition had been filed with the City of Kanab that would require that its pending conditional use permit application be subject to approval by a vote of the citizens of the City of Kanab. Shortly thereafter, DOE received a supplemental scoping letter on July 11, 2011, informing DOE of the risks of proceeding with funding the project in light of the pending citizen initiative. This letter also requested that the DOE stop any further preparation of the EA and prohibit any funding release until the citizen initiative for the

Viresco coal gasification Pilot Plant was completed. On August 2, 2011, the attorney representing the Taxpayer Association of Kane County again contacted DOE informing them that they were appealing the conditional use permit issued by the City of Kanab on July 20, 2011. The appeal was dated July 29, 2011.

1.4.2 Comments Received and Issues Identified During the Scoping Period

DOE received scoping comments with respect to specific natural and human environmental resources. Comments were expressed orally by individuals attending the scoping meeting; others were received on comment forms provided at the meeting, as well as by letter or email. Some commenter’s expressed support for the Pilot Plant, primarily for the technological aspects, including potential environmental benefits of clean domestic fuels and the use of renewable biomass. The majority of commenters expressed opposition to the Pilot Plant, primarily based on concerns about air quality, odors, visual aesthetics, effects on local economy (as a result of decreased tourism), among others. In all, 192 separate submissions of oral and written comments were received from a total of 146 individual commenters. Many commenters addressed multiple issues, resulting in a total of 803 comments on specific issues. Figure 1-3 illustrates the distribution of comments by subject matter.

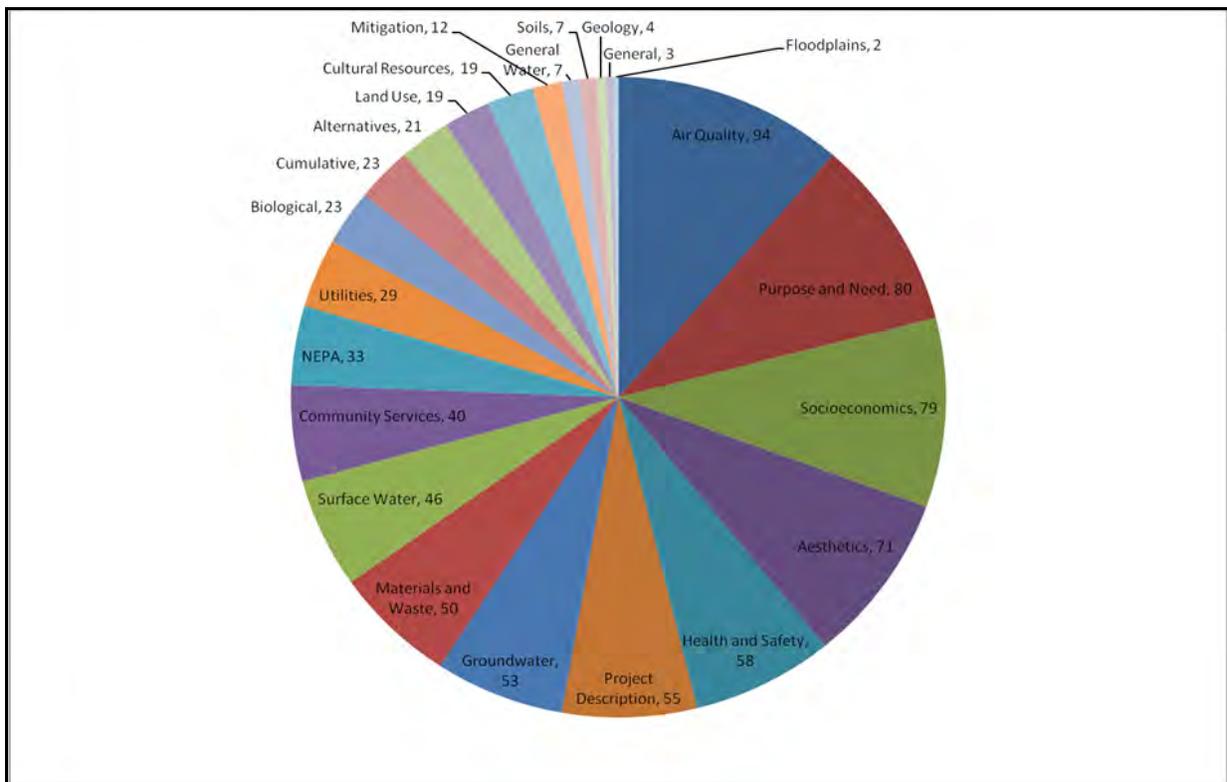


Figure 1-3. Distribution of Scoping Comments by Subject Matter

Table 1.4-1 provides a summary of scoping comments received and identifies the respective sections within the EA where the comments were taken into consideration. Overall, the majority of comments stated support or opposition to the Pilot Plant. Other comments consisted of questions about the Pilot Plant, with most questions relating to the steam hydrogasification process. Still other comments expressed concern about financial responsibility by Viresco, as well as preference for taxpayer money to go towards wind and solar technology. The scoping comments identified the following resource areas as chief concerns that should be addressed in the EA:

- Air Quality;
- Socioeconomics.

- Aesthetics;
- Public Health and Safety;
- Groundwater;
- Materials and Waste;
- Surface Water;
- Community Services; and
- Utilities.

Table 1.4-1. Summary of all Scoping Comments Received

<p>NEPA - Several citizens asserted that an EIS rather than an EA should be prepared for the proposed action; many also opposed to the project. Others expressed dissatisfaction with the local zoning process and argued that it should be re-conducted with more transparency. Comments expressed concerns about local politicians and religious leaders not listening to public interests.</p>
<p>Purpose and Need – Comments included questions about milestones, the NEPA process, funding activities, funding information, political influence (local and national), rental price for the property, and preference for taxpayer money to go towards wind or solar technology. Section 1.2.</p>
<p>Project Description and Alternatives –Commenters expressed concerns regarding: plans for the facility once testing is complete, gasifier repair costs and timelines, questions about whether the City of Kanab will have any financial responsibility for cleanup if Viresco abandons the project site. Several people compared the project to a failed/abandoned plant outside of Fredonia, and several would prefer that the EA consider another location. Section 2.3.</p>
<p>Traffic and Transportation – Comments included concerns about coal traffic leaving Alton mine and travelling through small towns, and noise from trucks going to the project site. Chapter 2.7.3.</p>
<p>Surface Water – Comments included concerns about water pollution, released toxins (benzene, toluene, and xylene), unexpected releases, and effects to Kanab Creek and the reservoir under construction. Some questioned who will monitor the impacts to surface water. Section 2.7.4.</p>
<p>Vegetation and Wildlife – Comments included concerns about endangered species and critical habitat, wildlife, avian species, livestock, fish and birds. Section 2.7.5.</p>
<p>Land Use – Comments included concerns that the project would be located adjacent to the reservoir under construction, land use violations, and an increase in industrial use in area. Section 3.1.</p>
<p>Aesthetics – Comments included concerns about odors, noise, visuals, light pollution, proximity to National Parks. Section 3.2.</p>
<p>Geology and Soils – Comments included concerns about petrified wood and ancient rocks. Others are concerned about soil contamination and have questions on how the levels of contamination would be measured. Section 3.3.</p>
<p>Cultural Resources – The Kaibab Band of Paiute Indians expressed substantial concerns about the project, the potential for effects on tribal artifacts and human remains that may be located on the site, and the lack of appropriate government-to-government consultation by DOE. Comments included concerns that the Kaibab Band was not appropriately notified. Others are concerned about local archaeological finds, and possible destruction of other artifacts. The Hopi tribe requested to be kept informed of project progress. The Utah SHPO concurred with DOE on the determination of no effect on historic properties. Section 3.4.</p>
<p>Air Quality – Comments included concerns about particulate matter, mercury, smog, toxins, preserving fresh air and clean skies, impacts to asthma, and effects from temperature inversions, contamination, and pollution. Some asked about pollution control equipment and who would inspect the plant; others made comparisons to residential wood burning practices. Commenters wanted to know if they'll be downwind of the project. Section 3.5.</p>
<p>Groundwater – Comments included concerns about groundwater pollution and toxins, especially from plant discharges and the sewage ponds. Questions about whether the ponds would be single- or double-lined. Citizens are concerned about who will monitor groundwater quality and about contamination from Kanab sewer ponds. Section 3.6.</p>

Table 1.4-1. Summary of all Scoping Comments Received

Materials and Waste – Comments included concerns about spills and cleanup, spent ash, fuels to be stored at plant, source of coal, solid toxic waste (i.e., mercury, lead, arsenic), waste disposal (both amount and frequency), storage of feedstocks. Some individuals are also concerned about oversight of waste disposal. Section 3.7.
Utilities – Comments included concerns about the pipeline along US 89A that would bring a large amount of “culinary grade” water to project. Section 3.8.
Public Health and Safety – Comments included concerns about toxins, mercury levels, respiratory illnesses, risk of fire and explosions, violation of health standards, and potential for evacuation of prison or city. Some commenters questioned whether Viresco would be responsible to pay for emergency response or health risks to the public. Citizens are concerned about staffing at hospital and fire department in case of project-related emergencies. Concerned about lack of hazardous materials (HAZMAT) facilities close by. Concerned that City of Kanab would need to create a cleanup bond. Section 3.9.
Socioeconomics and Environmental Justice – Comments included concerns that local economy would be hurt because of adverse effects on tourism and the attraction of retirees. Others are concerned about real estate values and local jobs. Questions were raised about an economic impact analysis, and infrastructure costs to Kanab and Kane County. Comments included concerns that location was picked because it is a low income area, or that it doesn’t have the environmental controls of NJ, TX or CA. Section 3.10.
Cumulative - Comments included concerns about cumulative effect of toxins, creation of additional unnecessary development (plant near Kane County Public Safety Facility and Jackson Flat Reservoir), coal mining in Alton, UT and its effects on noise, air and traffic. Section 4.2.
General - Comments included concerns that there are no Inspection plans or Quality Assurance Plans released to public for review. Provided a link to Kanab Cares website.

In general, most resource areas were commented on in a substantive manner during the public scoping period. Resource areas that received less attention in the scoping comments included: Wetlands and Floodplains, Noise, Vegetation and Wildlife, Land Use, Geology and Soils. Although these resource areas received limited attention from the public, the EA nevertheless addresses potential impacts to all resources potentially affected by the project.

1.5 Public Involvement on the Draft Environmental Assessment

1.5.1 Public Hearing on the Draft Environmental Assessment

The Draft EA for the Utah Coal and Biomass Fueled Pilot Plant was published in August, 2011. DOE distributed copies of the Draft EA to officials, agencies, Native American tribes, organizations, libraries and members of the public identified in the distribution list (Chapter 8). DOE advertised the availability of the Draft EA as well as the meeting location and time of the public hearing in two regional newspapers (Southern Utah News and The Spectrum) on August 17th, 21st, and 24th.

DOE held one public hearing for the Draft EA at the same location as the scoping meeting. An informal information session was held at the same location prior to the hearing from 5:00 pm to 7:00 pm, during which time attendees were given information about the project and were able to view project-related informational displays. Based on sign-in sheets, 59 individuals attended the public hearing. The informal open house was followed by formal presentations given by DOE and Viresco and then the formal comment period. The public was encouraged to provide oral comments at the hearing and to submit written comments to DOE by September 16, 2011. A court reporter was present at the hearing to ensure that all oral comments were recorded and transcribed. Oral comments were made by 11 individuals at the public hearing. The 35-day public comment period ended on September 16, 2011.

Appendix E of this EA describes the process DOE followed for cataloging and responding to comments. Appendix E also includes scanned images of the comment documents, beginning with the transcripts from both public hearings, and provides responses to all comments. DOE considered all comments to the extent practicable in preparing the Final EA.

1.5.2 Kaibab Community Meeting on the Draft Environmental Assessment

Prior to the August 30, 2011, public hearing in Kanab, DOE made arrangements to meet with the Kaibab Band at their regular monthly Council Meeting on August 25, 2011, and to continue formal government-to-government consultation; DOE sent all presentation materials to the tribe prior to the meeting as requested. The meeting was attended by two DOE representatives, including the Tribal Liaison and the NEPA Document Manager for the EA. At the meeting, council members discussed potential impacts as outlined in the Draft EA as well as DOE's plan for treatment of any unanticipated discovery of cultural resources, artifacts, burial sites or human remains, during construction. Tribal Council members and staff also requested that DOE extend the Draft EA's comment period for 30 days. DOE requested that the Kaibab submit comments on the Draft EA by September 16, 2011, adding that it is DOE's policy to consider late comments to the extent practicable. Discussion also surrounded the Kaibab's preparation of a draft Memorandum of Agreement (MOA) pertaining to their active participation in the unanticipated discovery plan. Kaibab council and tribal members also discussed the details of a DOE-led site visit scheduled for the following day, along with their desire for DOE to hold a community meeting on tribal land. DOE accommodated this request and made arrangements to hold this community meeting after the public hearing.

DOE's Tribal Liaison and the NEPA Document Manager both led and participated in a site visit on August 26, 2011, which was attended by the Kaibab tribal chairman and four tribal staff members. The project site visit enabled the tribal contingent to walk the site, take photographs, and to ask additional questions regarding project activities.

DOE representatives, who included the Tribal Liaison and the NEPA Document Manager, attended a community meeting from 3 pm. to 5 pm on August 31, 2011 at the Kaibab community center. A total of six Kaibab staff and tribal members attended the meeting. Two individuals provided oral comments, which were transcribed by a court reporter. DOE did not receive any written comments from the Kaibab during the community meeting.

Following the August 31, 2011, meeting, the Tribal Council chairman sent a letter to DOE formally requesting a 30 day extension on the Draft EA comment period (see Appendix E). In response, DOE replied by letter to the chairman acknowledging the request and again encouraging the tribe to submit comments by September 16, 2011. DOE also assured the tribe that, in the interest of continuing an effective working relationship between DOE and the Kaibab Band, it would give special consideration to comments received from the Tribal Council for a reasonable time after the end of the public comment period.

1.5.3 Public and Agency Comments on the Draft Environmental Assessment

DOE received comments on the Draft EA with respect to specific natural and human environmental resources. Comments were expressed orally by individuals attending the public hearing; others were received on comment forms provided at the hearing, as well as by letter or email. A few commenters expressed support for the Pilot Plant and the information presented in the Draft EA. The majority of commenters expressed opposition to the Pilot Plant, primarily based on concerns about air quality, water quality, odors, visual aesthetics, and effects on local economy (as a result of potential decreased tourism). In all, 91 separate submissions of oral and written comments were received from 79 individual commenters. Many commenters addressed multiple issues, resulting in a total of 573 comments on specific issues. Figure 1-4 illustrates the distribution of comments by subject matter.

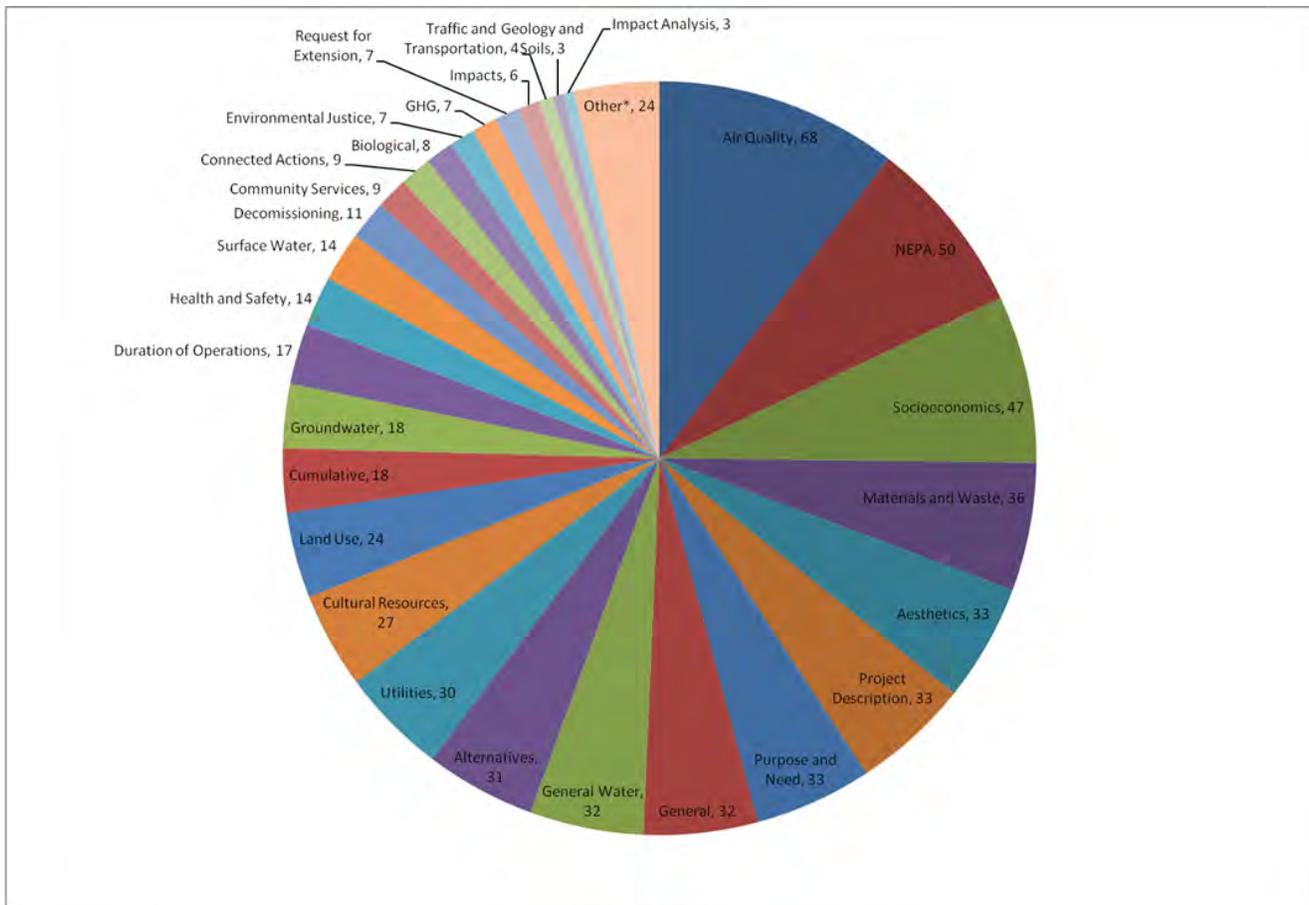


Figure 1-4. Distribution of Comments on the Draft EA by Subject Matter

In Figure 1-4 several comment classifications, such as the connected action, were grouped with resource areas as well; therefore, the number of comments in this pie chart adds up to more than the total number of comments discussed above. The portion of the pie chart labeled “other” includes comments about the issuance of a FONSI, irreversible or irremediable impacts, mitigation, noise, risks, compliance monitoring, energy balance, odors, permits, plant operations, proposed action, references, scoping summary, self monitoring by Viresco, tourism, and the use of coal. Table 1.5-1 provides a summary of comments received on the Draft EA and identifies the respective sections within the Final EA where the comments were taken into consideration.

Table 1.5-1. Summary of all Comments Received on the Draft EA

NEPA - Legal and general arguments asserting that an EIS should be prepared for the proposed action; many also opposed the project. Others expressed continued dissatisfaction with the local zoning process and expressed concerns about local politicians not listening to public interests.
Purpose and Need – Comments included dissatisfaction with locating the project in Kanab and providing cost-shared funding to Viresco without considering other potential applicants or alternatives. Section 1.2.
Project Description and Alternatives –Commenters expressed concerns regarding: plans for the facility once testing is complete, questions about whether the City of Kanab will have any financial responsibility for cleanup if Viresco abandons the project site. Sections 2.7.5 and 2.8.
Traffic and Transportation – Comments included concerns that the number of truck trips estimated to travel to and from the proposed Pilot Plant were misrepresented. Section 2.9.2.
Surface Water – Comments included concerns about the potential for contamination of surface waters from discharge or runoff of pollutants from the Pilot Plant, including potential impacts to the future Jackson Flat reservoir, which will be closer than Kanab Creek. Section 3.12 (new).

Table 1.5-1. Summary of all Comments Received on the Draft EA

<u>Vegetation and Wildlife</u> – Comments included concerns of the effects of construction and operation on plants and animals of cultural significance to the Kaibab Band, including access by animals to detention basins or evaporation ponds causing potential health risks. Section 3.11 (new)
<u>Land Use</u> – Comments included concerns over the uncertainty of the height of the tallest structure and the potential aesthetic impacts on vistas. Section 3.1.
<u>Aesthetics</u> – Comments included concerns about odors, noise, and the uncertainty of the height of the tallest structure and the potential aesthetic impacts on vistas. Sections 3.2, 3.5, and 3.9.
<u>Geology and Soils</u> – Comments included concerns about potential soil contamination from percolation of Pilot Plant contaminants into the ground at the site, including design (single-layer versus double-layer) of the evaporation pond liner. Section 3.3.
<u>Cultural Resources</u> – The Kaibab Band of Paiute Indians expressed substantial concerns about the project, and claim that the site is sacred to the tribe and undoubtedly contains tribal remains; they requested that tribal representatives participate in the monitoring of ground-disturbing activities during construction. The Kaibab Band of Paiutes also gave DOE a list of plants and animals that they consider of cultural significance to be considered in the Final EA. Sections 3.4 and 3.11 (new).
<u>Air Quality</u> – Comments included concerns about air emissions and potential health effects from toxic/hazardous emissions and exposure of detainees and staff at the new Kane County Public Safety Facility and at the future Jackson Flat reservoir and associated recreational facilities. There were concerns over potential deposition of toxic/hazardous components in surface waters, on plants used by the Kaibab Band, and otherwise entering pathways for human and animal ingestion. Section 3.5.
<u>Groundwater</u> – Comments included concerns about potential groundwater contamination from percolation of Pilot Plant contaminants into the ground at the site, including design (single-layer versus double-layer) of the evaporation pond liner. Commenters expressed concern about who will monitor groundwater quality and about contamination entering the existing Kanab sewage lagoons. Section 3.6.
<u>Materials and Waste</u> – Comments included concerns about wastes to be disposed of at the county landfill and potential contamination of surface and groundwater from leaching of contaminants; there were also concerns that hazardous wastes and coal ash from the Pilot Plant would be improperly disposed at the county landfill even if it is not licensed to receive hazardous wastes. Section 3.7.
<u>Utilities</u> – Comments included concerns about demands on utilities and effects on suppliers as well as potential impacts from the improvements necessary to supply electricity to the proposed Pilot Plant. Section 3.8.
<u>Public Health and Safety</u> – Comments included concerns about potential safety hazards from catastrophic accidents at the Pilot Plant and the potential ramifications of having insufficient local response capabilities (i.e., support would be required from St. George, which is over an hour away). Commenters also expressed concerns about staffing at the hospital and fire department in case of project-related emergencies and the lack of HAZMAT facilities close by. Commenters also questioned whether the City of Kanab would need to create a cleanup bond. Section 3.9.
<u>Socioeconomics and Environmental Justice</u> – Comments included concerns about the effect the Pilot Plant would have on tourism and the potential loss of tourism revenues; impacts on desirability and value of residential and commercial property; loss of commercial establishments by relocation in response to perceived Pilot Plant effects; economic impacts from potential default by Viresco and need for local support for site restoration and clean-up of wastes. Comments also stated that the Draft EA misrepresented the distance to the closest residence and did not consider residences in Arizona. The Kaibab Band of Paiute Indians expressed concern about impacts of the proposed project based on disproportionate effects on resources of cultural significance to the tribe (contamination of plants used for ceremonial purposes, contamination of culturally significant animals, contamination of tribal water sources, etc.) Section 3.10.
<u>Cumulative</u> - Comments included concerns that the proposed coal mine in Alton, UT, and the proposed Lake Powell Pipeline were not considered in cumulative impacts; also that the Draft EA did not adequately address past projects and activities that contribute to cumulative impacts. Chapter 4.
<u>General</u> – Majority of the comments were from citizens who are opposed to the project and are unhappy with decisions made by local and state politicians.

In general, most resource areas were commented on in a substantive manner during the public comment period. Because the topics of Surface Water and Vegetation and Wildlife Resource received substantial comments by

citizens and the Kaibab Band of Paiute Indians, the Final EA was revised to consider these resources in Chapter 3, and they were removed from Section 2.9, Resources not Considered in Detail.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 Introduction

This chapter describes the proposed action and no action alternative analyzed in this EA. As described in Chapter 1, CEQ's regulations direct all federal agencies to use the NEPA process to identify and assess the reasonable alternatives to proposed actions that would avoid or minimize adverse effects of these actions upon the quality of the human environment (40 CFR 1500.2(e)).

2.2 Proposed Action

Under the proposed action, DOE would provide financial assistance, pursuant to a Congressional earmark, to Viresco for construction and operation of a Coal and Biomass Fueled Pilot Plant that would convert carbonaceous feedstocks such as coal and lignocellulosic biomass into synthesis gas (*syngas*) suitable for further processing (i.e. downstream processes) to liquid fuel or to substitute natural gas. It is important to note that, because the Pilot Plant would operate on an intermittent basis (i.e. test runs), there are no plans to utilize the resulting syngas for sale or for downstream processes. The syngas produced as a result of the testing would be combusted properly in a flare system. No fuel products or electricity would be produced as a result of the proposed project.

The project would be located in Kanab, Utah, on land that is administered by the State of Utah, School & Institutional Trust Lands Administration (SITLA). The proposed site is 1.5 acres of a 10-acre parcel to be leased by Viresco. To date, this lease has been negotiated but not officially signed. The successful operation of this SHR gasification technology at the planned scale would achieve the goal of acquiring engineering information to develop a future commercialization pathway for this gasification process to produce liquid/gaseous fuels, and/or electric power from domestic resources such as coal and biomass. Viresco has no plans to commercialize the proposed Pilot Plant at the Kanab site in the future; it would remain a research and development facility.

2.3 Alternatives

DOE's proposed action is limited to providing financial assistance to Viresco in a cost-sharing arrangement to meet the requirements of a Congressional earmark in Fiscal Year 2010 Appropriation Act and its accompanying conference report. Therefore, DOE's decision subject to NEPA is limited to either accepting or rejecting the project as proposed by the proponent and specified by Congress, including its proposed technology and selected site. DOE's consideration of reasonable alternatives in this case is therefore limited to the proposed action and the no action alternative.

2.4 No Action Alternative

The no action alternative is required under Section 1502.14(d) of NEPA and DOE implementing regulations (40 CFR 1021.321(c)). A no action alternative is considered in this EA and provides a benchmark, enabling decision-makers to compare the magnitude of environmental effects of the proposed action. Under the no action alternative, DOE would not provide funding for the construction and operation of the Pilot Plant. To create the basis for a meaningful analysis, it is assumed under the no action alternative that the proposed project would not be undertaken, no construction or operations of the Pilot Plant would ensue at the proposed site, no other alternative at the proposed site would be implemented, and the proposed site would remain unchanged. It is possible that Viresco could construct the Pilot Plant or pursue another use for the proposed site using other funds independent of DOE. However, this scenario is unlikely as DOE funding is a critical component of this project and the project would likely not go forward without DOE's financial support.

2.5 Description of the Proposed Project

2.5.1 Primary Tasks and Goals

This Congressionally directed project would initiate evaluation of the SHR process at pilot scale. As discussed in Section 1.2, Viresco has been conducting research and development for several years on an innovative gasification technology concept that utilizes SHR to produce liquid fuels from coal and/or other carbonaceous materials (e.g., biomass). Building upon their prior laboratory-scale research and development, Viresco intends to

design, build, and operate a pilot-scale steam hydrogasification facility capable of converting 5 tons per day (tpd) of feedstock into a clean, high-energy content product gas suitable for downstream production of electricity or a number of fuels, including Fischer-Tropsch diesel, jet fuel, dimethyl ether, and methane; although the Pilot Plant would not include further processing of the syngas or generation of electricity.

The SHR process incorporates a fluid bed gasifier, fluidized by steam and hydrogen with sand as the primary bed material. A heat carrier is connected by a standpipe and return line to a fluid bed regenerator (combustor) that heats the sand using char carbon and air. The SHR process offers several advantages over conventional air- or oxygen-blown gasification processes. For example, oxygen is not required to gasify the coal thereby eliminating the need for costly air separation units; the process uses wet feedstock, which has the advantage of eliminating energy-intensive drying steps used in other thermo-chemical conversion processes; and waste streams can be used as feedstock.

The following major tasks would be undertaken for the construction of the Pilot Plant:

- Design, construct, and commission an SHR gasifier to process incoming slurry of coal or coal-biomass blended material. Coal or coal-biomass pyrolysis and steam gasification would occur in this vessel. During this process the carbonaceous feedstock is converted into high energy content syngas (primarily methane, hydrogen, carbon monoxide, and carbon dioxide).
- Pyrolysis** is a thermochemical decomposition of organic material at elevated temperatures in the absence of oxygen. Pyrolysis typically occurs under pressure and at operating temperatures above 430 °C (800 °F).
- Design, construct, and commission a fluidized bed regenerator (combustor) which would recover and return heat to the hydrogasifier. The SHR would be coupled to the fluidized bed regenerator.
 - Design and install the coal biomass fuel feed system. This system would consist of slurry mixers, slurry pumps, and storage bins. Coal would be delivered to the site pre-ground, although Viresco is considering adding coal grinding for future operations (see Section 2.8 Consideration of Connected Actions).
 - Design and install the syngas flare.
 - Design and install the process instrumentation and control system. The plant would be operated using both a computerized performance reporting and documentation system and manual daily logs to ensure that monitoring and other management activities are performed correctly.
 - Interconnect the proposed Pilot Plant with existing utility systems, including potable (i.e., culinary or drinking) water and sewer to be supplied by the City of Kanab, electricity to be supplied by Garkane Energy, and communications to be provided by South Central Communications. As natural gas is not available at the site, propane would be purchased from Garkane Energy and would be stored on site.
 - Design and construct a building to house the laboratory space, office space, machine shop and storage area.

The goal of primary testing would include operations to determine:

- The thermal and mass balance of the system;
- The carbon conversion efficiency and the thermal efficiency of the system;
- Conditions required to sustain gasification with a minimum steam input to the reactor;
- Conditions required to maintain the heated fluidized bed regenerator;
- The impact of steam input rates and steam/carbon ratios on the steam hydrogasification of coal including determining syngas composition and carbon conversion within the hydrogasifier; and
- The fate of coal impurities.

2.5.2 Project Site

The project would be located at: Sec 10, T44S, R6W, Salt Lake base and meridian, SW4NW4NW4, Section 10, in southern Utah's, Kane County, near the Arizona border. The Vermillion Cliffs are located to the north of the site and Shinarump Cliffs are located to the south. The land is administered by SITLA. The proposed 1.5-acre site (Figure 2-1) is part of a 10-acre parcel to be leased by Viresco located approximately 2.5 miles south of the center of the City of Kanab in Kane County, Utah. As previously mentioned, the terms and conditions of the lease have been negotiated but not yet signed.

The site is accessible from US 89A by a recently paved road (Kaneplex Road) which leads to the Kaneplex Rodeo and Kane County Landfill. Figure 2-2 shows the location of the proposed site at the intersection of Old Landfill Road and Kaneplex Road and its immediate surrounding site features. The proposed project site is an existing undeveloped lot that currently consists of shrubby and herbaceous vegetation. The surrounding region generally consists of shrub/scrub, grasslands, and pasture land cover. Approximately 0.25 mile north of the site, construction is underway for the Jackson Flat Water Supply Storage Project, which would consist of the construction of a dam embankment, water supply pipeline, water storage area (i.e. reservoir), and pump station. The closest residential property in Utah (a farm) is located off US 89A approximately 0.6 mile west of the site; the closest residential property in Arizona is located approximately 0.55 mile southwest of the site. Additional residential and non-residential buildings are located within approximately 1 mile of the site.



Figure 2-1. Proposed Pilot Plant Site (looking Northwest)

The site is also less than 2 miles from the northeastern border of the Kaibab Paiute Reservation. The reservation occupies approximately 189 square miles in northeastern Mohave County and northwestern Coconino County in Arizona and approximately 200 individuals reside there. The Tribal Council headquarters are located near Pipe Spring National Monument, approximately 17 miles southwest of the proposed Pilot Plant site.

2.5.3 Site Layout of the Proposed Pilot Plant

Figure 2-2 is an aerial photograph showing a conceptual overlay of the Pilot Plant. Figure 2-3 is a conceptual drawing of the Pilot Plant. Note that connections to existing utilities (i.e. potable water, sewer, electricity, and communications) would generally be contained within and located along the northern boundary of the project site (Kaneplex Road). Equipment, processes, and utilities are discussed in more detail in Section 2.7.2.

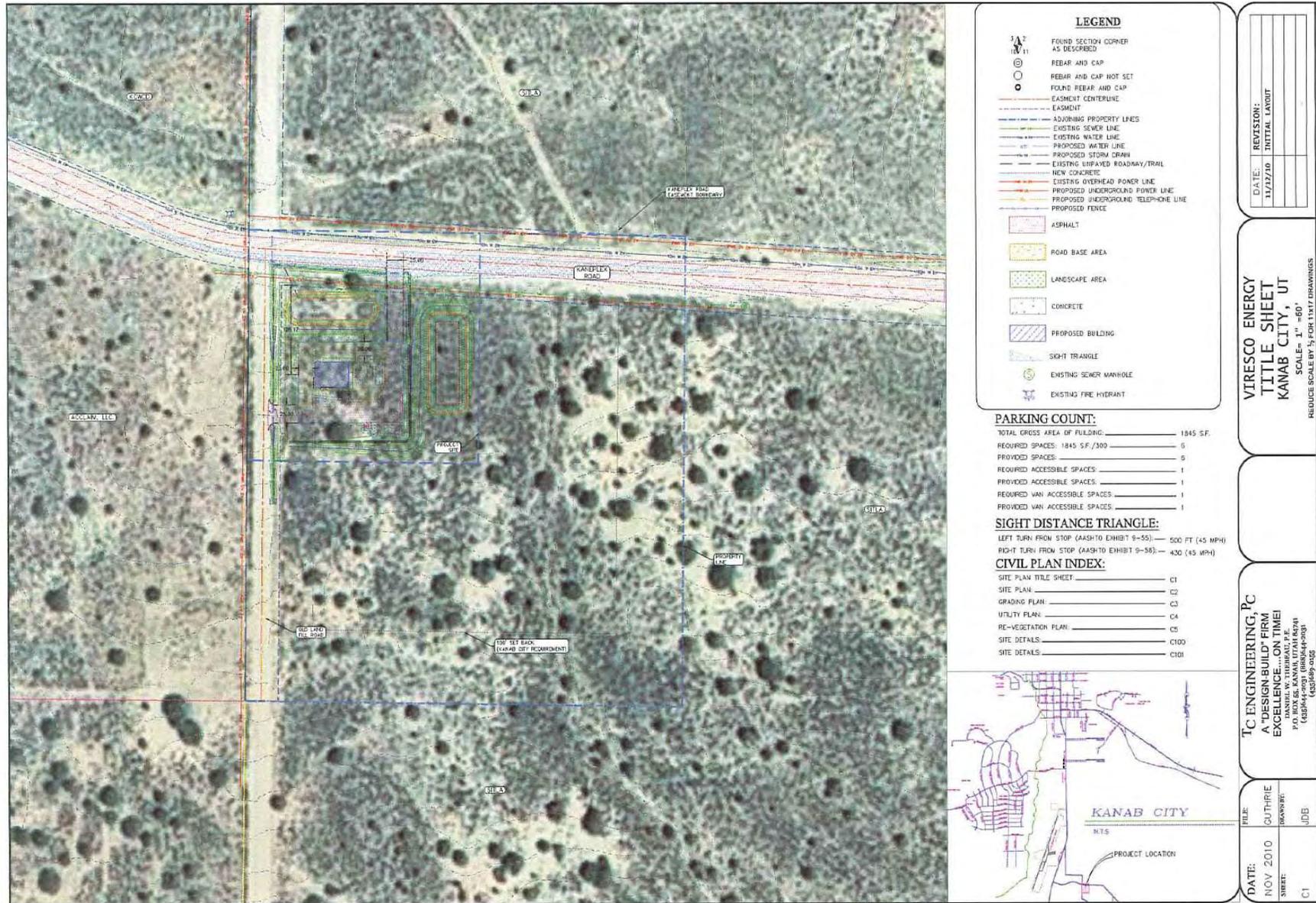


Figure 2-2. Project Location Map



Figure 2-3. Conceptual Drawing of Pilot Plant

2.6 Construction

Construction of the Pilot Plant would take approximately 4 months beginning in early 2012. It is estimated that up to 30 construction workers would be required at the site at any given time. Construction activities would include site clearing and preparation; build-out of support areas and buildings; installation of equipment for process systems; and final systems check. A National Pollutant Discharge Elimination System (NPDES) permit would be required as there would be more than 1 acre of disturbance. Specific stormwater control best management practices (BMPs) would be developed during final site design and could include BMPs such as temporarily seeding bare soil areas with appropriate native vegetation to reduce onsite soil erosion. Construction of the Pilot Plant would occur in the following sequence:

- Site clearing, installing the stormwater drainage system, setting the final elevation of the site, installing the gravel for the roads and parking lot, and installing the perimeter fence.
- The manufacturing, assembly, and installation of the SHR gasifier, fluidized bed regenerator and associated infrastructure (i.e. coal biomass fuel feed system, syngas flare).
- Construction of the laboratory building (which would include offices, a laboratory, a storage area, and machine shop) and support structure (which would house the steam-generating boiler). Installation of the utilities including the electrical system, potable water, sewer, and communications.
- Performing a final installation check for all systems. This would consist of operating all equipment in the system. Each system component would be checked individually as they are assembled and installed. The process instrumentation and control system would be checked for proper operation according to the design specifications.
- Performing “shakedown runs” at the Pilot Plant to bring all equipment online after final installation checks. Once this is complete, the Pilot Plant would enter operational mode.

2.7 Operation

Operation of the Pilot Plant would be expected to commence during 2012. The Pilot Plant operations under the cooperative agreement with DOE would be limited by funds available and would be expected to total up to 30 days. These operations would focus on optimizing the functionality of the individual and integrated equipment components. The plant would not be operated for 30 continuous days but would operate during three or four testing periods; typical test periods are expected to last an average of 5 to 20 days each. Plant personnel would provide the daily management and monitoring of quality, performance, and health and safety of workers during periods of testing and would perform maintenance and service responsibilities as needed. Approximately 9 employees would be required for the operation of the Pilot Plant. Table 2.7-1 summarizes the feedstock, materials, and waste streams that would result from operation of the Pilot Plant. The following sections discuss these components in greater detail.

2.7.1 Materials Required

The primary required feedstocks would include coal and biomass. The biomass would consist of a woody waste from southern Utah, which would be transported to the site via truck. Pre-pulverized coal would be delivered to the Pilot Plant in bags for the 30-day demonstration under the cooperative agreement with DOE. The proposed Pilot Plant would utilize a maximum of 5 tons of coal per day for testing. The Pilot Plant would use sub-bituminous or lignite coal and Viresco would store up to 40 tons of the coal on site for testing. Overall it is anticipated that approximately 150 tons of coal would be required for 30 days of testing. The coal would be obtained from commercial sources and transported to the site via trucks; it is anticipated that there would be a total of 8 truck deliveries of coal and up to 4 truck deliveries of biomass over the 30 days of operation under the cooperative agreement with DOE. Viresco plans to test one coal-biomass mixture during the DOE cooperative agreement, after the initial testing is completed with coal. The percentage of biomass to be used in the feed would be decided later; however, it is likely to be 10 to 50 percent by weight.

Table 2.7-1. Feedstock, Materials, and Waste Streams

Item	Description
<i>Feedstock and Material – Quantity and Source</i>	
Coal	5 tons per day, 150 tons for 30 days of operation; transported by truck
Lignocellulosic Biomass	The percentage of biomass in the feed to be decided later; however, it's anticipated to be 10 to 50 percent in weight.
Process Water	<u>3,290</u> gallons per day (gpd), supplied by the City of Kanab (<u>850 gpd may be supplied by recycled water</u>)
Sand	Up to 300 tons, for 30 days of operation, transported by truck.
Propane	660 gpd, purchased from Garkane Energy
Hydrogen	<u>52</u> pounds per hour (lbs/hr)
<u>Nitrogen</u>	<u>276 lbs/hr for purging and fluidization</u>
Electricity	225 kilowatts (kW); supplied by Garkane Energy
Potable water	250 gpd; supplied by the City of Kanab
<i>Products and Wastes – Quantity and Method of Treatment</i>	
Process Wastewater	Total of <u>850 gpd</u> , <u>either recycled or transported offsite for treatment and disposal (the remaining process water that does not become effluent would exit the system as steam)</u>
Sanitary Wastewater	Sanitary/gray water 250 gpd, collected by the City of Kanab
Solid Waste	<u>1,168</u> pounds of ash per day <u>not including fines</u> , Total of 26 tons including fines <u>and ash</u> for 30 days of testing. Would be collected, analyzed, and disposed <u>of in a landfill permitted to accept ash.</u>
Air emissions	Most notable emission would be carbon monoxide and is estimated to be less than 4 tons for the 30 days of operation; <u>4,690 gpd of steam would be generated and exit the gasifier flare and regenerator exhaust into the atmosphere.</u>

The SHR gasifier and the regenerator would use less than 300 tons of sand for the 30 days of operation. Unlike the feedstock, the sand is not consumable and therefore, would not need to be supplied regularly. The maximum amount of sand to be stored on site would be 350 tons. The sand would be obtained from commercial sources and transported to the site via trucks; it is anticipated that there would be a total of 3 truck deliveries of sand throughout the period of 30 days of operation.

Process water would be required at a rate of 3,290 gpd for a total of 98,700 gallons for 30 days of operation, which would be supplied by the City of Kanab (see Figure 2-4). Viresco intends to recycle up to 850 gpd of this effluent (total of 25,500 gallons over 30 days) for the fuel feed system depending on the water composition of the process wastewater, which could reduce the process water demand to 2,440 gpd. Prior to recycling, Viresco would test the water quality of the process wastewater to determine the feasibility of reuse at the facility. If the process wastewater can be reused, some water treatment may be implemented (e.g., water filtering device) and the recycled water would be supplied back into the Pilot Plant. The daily potable water demand by the Pilot Plant when it is operational would be limited to the needs of a workforce of 9 employees at 250 gpd for a total of 7,500 gallons for 30 days of operation. Both the process water and the potable water would be supplied by the City of Kanab's potable water system. The total daily rate of water use (3,540 gpd for process water and potable water use) represents 0.07 percent of the existing wells and spring capacity that supply the City of Kanab's potable water system.

Natural gas is not available at the site; therefore, propane would be used as fuel for the boiler and regenerator. Propane would be purchased from Garkane Energy and transported to the site via truck. The propane would be stored on site in a 6,000 gallon tank. It is expected that the 6,000 gallons of propane would be able to sustain 9 days of testing as the Pilot Plant would use 660 gpd of propane. Therefore, it is anticipated that there would be a total of 3 truck deliveries for the period of 30 days of operation delivering propane to the site.

Hydrogen would be used as feed for the gasifier during operation of the Pilot Plant. The liquid hydrogen would be stored on site in a 18,000 gallon tank. It is expected that hydrogen would be used at a rate of 52 (lbs/hr) which would sustain 8 days of testing at the Pilot Plant. The liquid hydrogen would be delivered by truck, and it is anticipated that there would be a total of 4 truck deliveries for the period of 30 days of operation.

Nitrogen would be used for purging and fluidization at a rate of 276 lbs/hr. Purging and fluidization would take place continuously during normal operation. Nitrogen would also be used during startup and shutdown of the gasifier. The liquid nitrogen would be stored on site in a 11,000 gallon tank adjacent the hydrogen tank (see Figure 2-3). It is estimated the liquid nitrogen stored on site would sustain 10 days of testing and, therefore, an estimated total of 3 truck deliveries would be made to the site for 30 days of operation.

Electric power would be supplied by Garkane Energy. The preliminary estimated power demand is 225 kW.

2.7.2 Facility Processes and Equipment

This section describes operations at the Pilot Plant in the context of the processes involved and associated facilities and equipment. The Pilot Plant operations under the cooperative agreement with DOE would be limited by funds available. These operations would focus on optimizing the functionality of the individual and integrated equipment components. During the period of the cooperative agreement with DOE the Pilot Plant would operate for a total of 30 days and it is expected approximately nine employees would be required for operation of the Pilot Plant. Plant personnel would provide daily management and monitoring of quality, performance, and health and safety of workers and would perform maintenance and service activities. The Pilot Plant would consist of the following processes and equipment as illustrated in Figure 2-4.

Laboratory Building and Support Structure

The proposed Pilot Plant would include the construction of a laboratory building and support structure. The laboratory building would include offices, a laboratory and a storage area. The laboratory building would also house the computerized process instrumentation and control system for operation and data acquisition. Manual daily logs would also be maintained and stored here. The support structure would support the main gasifier and regenerator vessels. Ancillary equipment such as the steam boiler, slurry preparation, and air compressor are designed to be on small skid modules. The skid modules would consist of the aforementioned items built offsite and mounted on a heavy-duty structural steel frame base with grated working platforms and delivered to the site fully constructed. The skids would be equipped with all the necessary ancillaries required for operation. This allows any construction schedule to be compressed as less "onsite" fabrication would be needed.

Feedstocks to the Steam Hydrogasification Reactor

For the SHR gasifier to work it would need to be provided certain feedstocks consisting of hydrogen, steam, and a coal or coal and biomass slurry. Hydrogen would be generated offsite, trucked to the site and stored in a liquid hydrogen container. Hydrogen from tube trailers or liquid hydrogen bottles would be used for the hydrogen supply to the gasifier. The hydrogen would be heated to approximately 324 degrees Celsius (C) for feed to the gasifier at approximately 52 pounds per hour (lb/hr) feed rate. Steam generation would be created by adding potable water to the boiler. A steam generator would be included that can superheat steam to 732 degrees C for delivery at a rate of approximately 1,350 gpd (470 lbs/hr) to the gasifier. Finally, the coal biomass fuel feed would consist of coal slurry mixers, slurry pumps, and storage bins. Five dry tons per day of coal or a mixture of coal and biomass would be mixed with potable water to create a slurry which would then be sent to the gasifier.

Pilot Plant Schematic

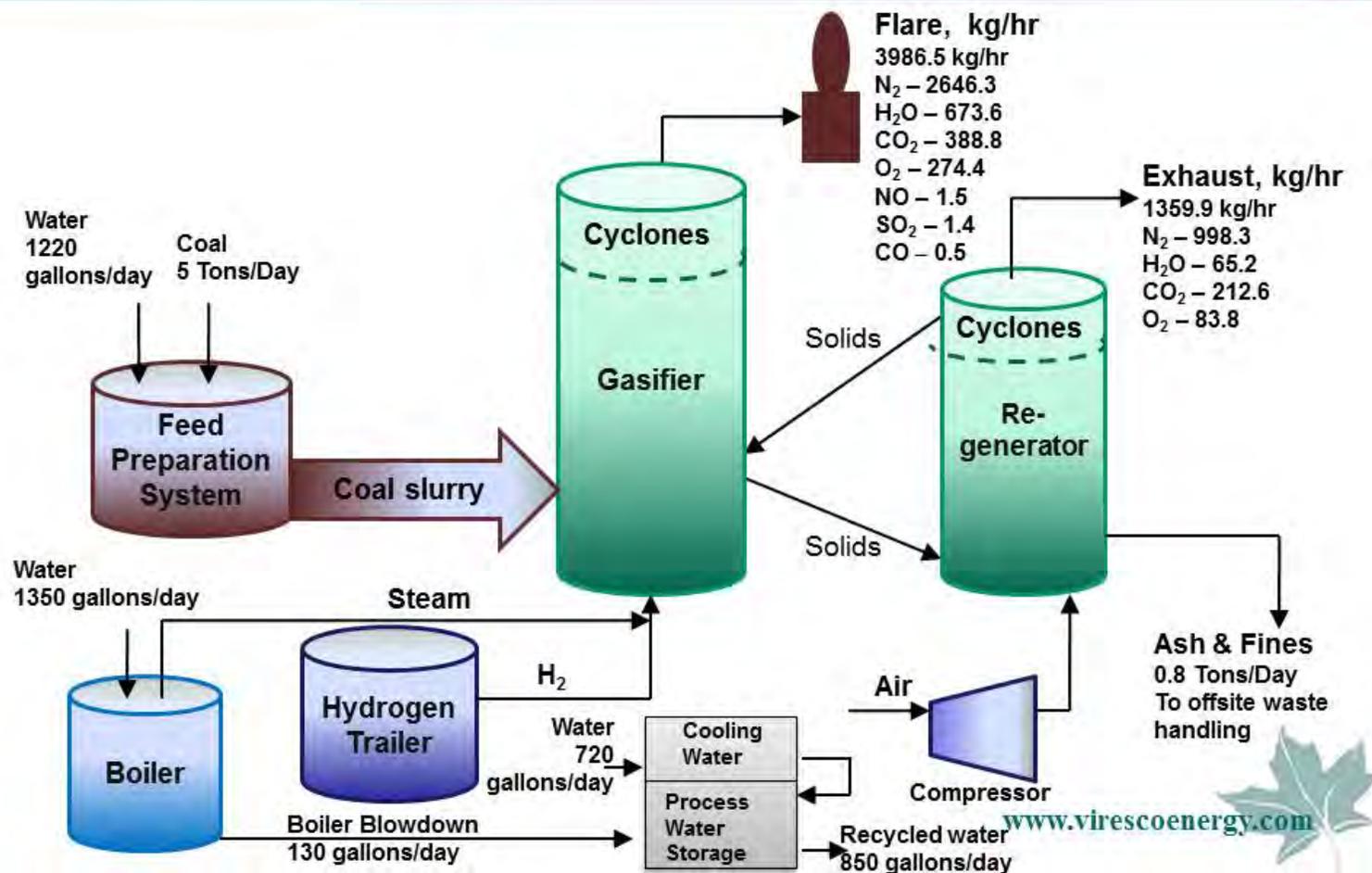
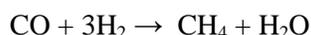
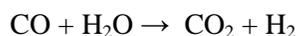
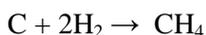


Figure 2-4. Utah Coal and Biomass Fueled Pilot Plant Processes

Steam Hydrogasification Reactor

Once all of the feedstocks are sent to the gasifier the steam hydrogasification reaction is ready to take place. The gasifier would be coupled to the fluidized bed regenerator (discussed in more detail below). Coal or coal-biomass pyrolysis and steam gasification would occur in the gasifier. The steam hydrogasification process uses both steam and hydrogen to affect the reaction. The process takes a feed of carbonaceous material and, under high temperature and pressure, converts it into gases predominantly consisting of methane, carbon monoxide and hydrogen by the following primary reactions:



During pyrolysis, volatiles are released from the feedstock as a gas containing primarily hydrogen, methane, steam and some higher hydrocarbons as oils or tars. Within the same vessel the solid char, which remains after the initial pyrolysis, undergoes the steam hydrogasification reactions to generate syngas containing carbon monoxide, methane, carbon dioxide and hydrogen.

Fluidized Bed Regenerator

The fluidized bed regenerator coupled to the SHR gasifier would recover and return heat to the SHR gasifier. The fluidizing medium within the regenerator is sand. The sand would be heated by the energy generated through the combustion of unreacted char from the SHR gasifier and additional fuel (propane). The hot sand would then be recirculated back to the SHR gasifier. Unconverted char and some of the ash product would flow from the gasifier to the regenerator along with the circulating sand. The char would be combusted in the regenerator along with added propane fuel to provide heat for the process. The hot sand would be separated from the ash, and the sand circulated back to the SHR gasifier.

Syngas Flare and Removal of Ash and Fines

Ash and fines produced as a result of the steam hydrogasification reaction would be separated from the gaseous products and sand from the reactor and regenerator using cyclone separators. Ash would be received in a hopper after cooling. The ash and fines would be collected, analyzed, and disposed of in a landfill permitted to accept the ash and fines. Wastewater, which is generated as blowdown from the boiler feedwater, would be collected and reused within the process. Process gases from the hydrogasifier would be sent to the flare, and no condensation of process water is expected during normal operation. The product gas from the gasifier would also be flared in the flare stack.

2.7.3 Products and Waste Generated

Based on a sub-bituminous coal feedstock, the Pilot Plant would produce 1,168 pounds of ash during each day of testing. The ash would be removed from the process continuously using cyclone separators to separate it from the process gases, and from the sand. The total ash produced during 30 days of testing would be around 17 tons (26 tons including estimated ash and fines). Viresco would use appropriate ash and fines handling and storage methods to prevent dust from blowing offsite. These methods typically involve keeping the ash and fines wet or encapsulating the ash with a cover. The ash and fines would be collected, analyzed, and disposed of in a landfill permitted to accept the ash.

The maximum process wastewater produced during testing would be 850 gpd, consisting of 130 gpd from boiler blowdown and 720 gpd from the non-contact cooling water system (see Figure 2-4). This effluent would be directed to a storage container for potential reuse in the fuel feed system. As discussed in Section 2.7.1, Viresco intends to recycle up to 850 gpd depending on the water composition of the effluent. If recycled, some water treatment may be implemented prior to re-use; a small amount of wastewater solids would be generated and disposed of offsite. If the process wastewater cannot be recycled, then a licensed contractor would transport, treat, and dispose of the process wastewater offsite. The maximum process wastewater that would be generated over the course of 30 days of operation would be approximately 25,500 gallons, to be recycled or treated and

disposed of offsite. The remaining process water used that does not exit the Pilot Plant as wastewater effluent would end up being released as steam from the syngas flare and regenerator exhaust. Because water creation occurs in the syngas flare and regenerator, the amount of steam exiting these systems (4,280 gpd and 410 gpd, respectively) is greater than the remaining balance of process water that does not exit the Pilot Plant as effluent. Process gases from the hydrogasifier would be sent to the flare hot, and no condensation of process water is expected during normal operation.

The Pilot Plant would be considered a minor source of air emissions. As a minor emitter for air pollutants the project would qualify for an exemption from a full air emissions permit as a small source under regulations enforced by the Utah Department of Environmental Quality (UDEQ), Division of Air Quality (DAQ), which is the state environmental agency responsible for issuing air permits. Notably, emissions would be made up almost entirely of typical combustion gas components (nitrogen, oxygen, carbon dioxide, and water vapor) with small amounts of, criteria pollutants (i.e. non-hazardous) and a minute amount of uncombusted hydrogen. With regard to hazardous air pollutants (HAPs), high molecular weight organic compounds, radionuclides or toxic metals would not be expected in quantities that would pose a health hazard, based on the combustion efficiency of the flare and the small concentrations of metals and radionuclides in the feedstock to the gasifiers. GHG emissions would be approximately 543 tons of CO₂ for the 30 days of operation. This is equivalent to annual GHG emissions from 96 passenger vehicles, or the electricity use of 60 homes for one year (USEPA, 2011a).

Sanitary wastewater would be generated by the employees of the Pilot Plant at a rate of approximately 250 gpd (based on a standard rate of 28 gallons per employee per day) for a total of 7,500 gallons for the 30 days of operation. The wastewater would be disposed of through the local public sanitary sewer system via an existing pipeline located along Kaneplex Road. The City of Kanab's existing sewer system would have the capacity to meet this demand without the need for upgrades. This total daily rate represents 0.07 percent capacity of the two wastewater lagoons currently utilized by the City of Kanab.

2.7.4 Benefits of Pilot Plant Systems

Hydrogasification does not require an oxygen plant, which can be a substantial cost to a gasification facility. The addition of steam to hydrogasification significantly increases reaction rates, which lowers residence times allowing for, amongst other things, smaller reactors. Since the feedstock would be gasified with water (steam), it does not need to be dried beforehand and could potentially be fed as a slurry. Although steam hydrogasification has been studied only recently, it appears to be compatible with all the typical gasification feedstocks, from coal to renewable sources like wood, agriculture residues, green wastes, municipal solid wastes, food and animal waste, and sewage sludge.

2.7.5 Decommissioning

Per the negotiated terms and conditions of the lease with SITLA, and under the terms of the cooperative agreement with DOE, Viresco would be responsible for properly removing structures, equipment and debris, restoring the land to the original contour, and revegetating the land as necessary upon termination of the lease. It is expected that decommissioning activities would take place over a period of several months. The decommissioning activities are described below.

Decommissioning of the Pilot Plant would include the removal of all structures, equipment, and related components (e.g., electrical wiring, piping, etc.). Structures and equipment to be removed include:

- SHR gasifier
- fluidized bed regenerator (combustor)
- coal biomass fuel feed system
- the syngas flare
- process instrumentation and control system
- laboratory building (laboratory, office space, machine shop and storage area)
- steam generating boiler (located within laboratory building)

- 6,000-gallon propane tank
- 18,000-gallon liquid hydrogen tank
- 11,000-gallon liquid nitrogen tank
- stormwater detention structures
- evaporation pond (future operations, see Section 3.6.2)
- steam propane reformer (future operations, see Section 2.8)
- biomass and coal grinders, as well as a biomass slurry preparation system (future operations, see Section 2.8)

All equipment would be drained of fluids or accumulated material (e.g., sludge in boiler) and analyzed for proper offsite treatment. Materials such as vessels, steel structures, and piping systems would be removed and either recycled, sold for reuse, or salvaged as scrap metal. Building debris (e.g., drywall, wood, bathroom tile, etc.) would be segregated and transported offsite for disposal at a licensed landfill. Office and laboratory equipment would be sold for reuse, if practicable, or transported to an offsite landfill.

Connections to utilities (i.e., potable water, sewer, electricity, and communications) would be shut off and all connecting infrastructure would be removed. Following removal of subsurface utilities, the area would be filled in with local clean fill dirt and graded to its original condition. Concrete from paved areas (i.e., building foundation, areas under hydrogen, nitrogen and propane tanks) would be removed and transported to an offsite landfill. Gravel used for the roads and parking lot would be sold for reuse or landfilled offsite. Perimeter fencing and fence footings would be removed and recycled or landfilled offsite, whichever is most feasible. Fencing would remain until after all other decommissioning activities are completed to restrict access to the property during decommissioning.

The majority of materials removed from the site would consist of nonhazardous solid waste that can either be recycled or landfilled at an offsite facility. Minor amounts of hazardous waste (e.g., unused solvents and process chemicals) could be present and would be managed in accordance with federal and state hazardous waste regulations to ensure the proper management and disposal of the waste. Any equipment that has the potential to be contaminated from operations would be separated, analyzed for the presence of contaminants, and disposed of accordingly. Fluorescent light bulbs and batteries, which are regulated as universal waste, would be segregated and transported offsite to a licensed disposal facility. No new chemicals would be introduced during decommissioning activities.

Ash and fine waste produced in the process are considered a special waste in Utah. These wastes would be removed from the site periodically during operations, but it is likely some would be present at the time of decommissioning. Any ash and fine waste would be removed from the site and transported to an offsite licensed landfill. The surface soil and subsurface soil (typically 1-foot depth; however, if based on field reconnaissance or sampling results, sampling could extend to deeper depths) would be sampled and analyzed for the presence of contaminants (primarily metals). Viresco would consult with the UDEQ prior to soil sampling to ensure that all activities are conducted in accordance with Utah regulations. If contaminants are present, a remediation plan would be implemented in accordance with Utah regulations. Based on an approved plan from the UDEQ, the soil would be excavated to the appropriate depth (determined by sampling results). Contaminated soils would be excavated and sent offsite for treatment. Soils that are free of contaminants would remain in place. Excavated areas would be filled in with clean fill dirt from a local supplier and graded to their original condition.

Operation of the Pilot Plant would require storage of sand and coal. It is expected that these materials would be used prior to decommissioning; however, if present at the time of decommissioning, they would be sold for reuse. The underlying surface soil in these storage areas would be graded and if necessary would be filled in with clean fill dirt from a local supplier and graded to their original condition.

The stormwater detention structures would be drained of any water present and the water would be analyzed for the presence of contaminants (although not expected to be present). Based on the water sampling results, the water from the detention pond would be discharged to the sanitary sewer system, or collected for offsite treatment

and disposal. Future operations may include the installation of a lined evaporation pond (see Section 3.6.2) that would hold process wastewater. The process wastewater and any solids present in the evaporation pond would be sampled and analyzed for contaminants. Based on the sampling results, the water would be discharged to the sanitary sewer (if it meets local discharge requirements) or would be contained and transported offsite for treatment and disposal. Similarly, solids removed from the evaporation pond would be analyzed to determine if it should be managed and disposed of as a hazardous or nonhazardous waste. Based on the sampling results, the solids would be placed in containers and transported offsite to an appropriately licensed facility (either a landfill if nonhazardous or a hazardous waste disposal and treatment facility if hazardous). Following removal of the stormwater detention structures and the evaporation pond components the area would be visually inspected.

Viresco would consult with the UDEQ to determine if soil should be sampled for the presence of contaminants. If soil sampling is required, Viresco would consult with the UDEQ prior to soil sampling to ensure that all activities are conducted in accordance with Utah regulations. If contaminants are present, a remediation plan would be implemented in accordance with Utah regulations. Based on an approved plan from the UDEQ, the soil would be excavated to the appropriate depth (determined by sampling results). Contaminated soils would be excavated and sent offsite for treatment. Soils that are free of contaminants would remain in place. Excavated areas and the pits where the detention structures and evaporation pond were present would be filled in with clean fill dirt from a local supplier and graded to their original condition.

Decommissioning, transport of all materials off the property, laboratory analysis, and disposal at offsite facilities would all be conducted in accordance with applicable federal, state and local regulations. Standard operating procedures for safe operation of a construction site would be adhered to, including procedures for the safe operation and movement of vehicles; maintaining staging areas for equipment disassembly and segregation of solid waste; adhering to a Spill Prevention, Control, and Countermeasures (SPCC) Plan; and maintaining fenced and restricted access. No specific permits are expected to be required for the decommissioning activities. Decommissioning activities would be conducted during normal business hours.

The Pilot Plant would be regulated under a NPDES permit during operation and this permit would require proper management and control of storm water runoff and erosion during decommissioning, including adoption of a Stormwater Pollution Prevention Plan (SWPPP). In accordance with its lease with SITLA, Viresco would revegetate the land with native plants present in the surrounding area. The revegetation of the land would prevent soil erosion, ensure the establishment of native vegetative species, and control noxious weeds and pests (SITLA, Undated). A revegetation plan would be adopted through consultation with the UDEQ to ensure the proper plants, number of plants, time of planting, and monitoring are appropriate to ensure successful revegetation of the property.

2.7.6 Permits, Regulations, and Applicant Committed Measures

Table 2.7-2 summarizes permits and agency approvals, potentially applicable regulations, and Viresco-committed measures for the proposed project.

2.7.7 Mitigation Action Plan

DOE plans to prepare a Mitigation Action Plan in the event that a FONSI is issued. The Mitigation Action Plan would include mitigation measures for Air Quality, Cultural Resources, Geology and Soils, Health and Safety, and Biological Resources. These measures would be targeted at controlling dust during construction, erosion control, landscaping, and vegetative cover. The Mitigation Action Plan would also require that Viresco have a tribal representative on site during any excavation activities as well as have an anthropologist on call in the case that any cultural items or human remains are discovered. Additionally, the Mitigation Action Plan would require that Viresco have a HAZMAT responder for any clean-up should a spill occur, and develop a monitoring plan for water in the stormwater detention basin and process wastewater to determine whether animal exclusion devices should be incorporated in the design of either the detention basin or the evaporation pond, should Viresco pursue this option for future operations.

Table 2.7-2. Permits and Approvals Needed Prior to Project Implementation

Material, Use, or Resource	Type of Approval	Agency/Entity	Requirements/Applicant Committed Measures
EA	FONSI or ROD	DOE/NETL	
Threatened and Endangered Species	Determination of no Adverse Effect	USFWS and UDNR	DOE submitted consultation letters to the Utah regional office of USFWS and to UDNR. The consultation letters are presented in Appendix A.
Section 106, historical/archeological		SHPO	Section 106 of the NHPA requires federal agencies to take into account the effects that their federally funded activities and programs have on significant historic properties. "Significant historic properties" are those properties that are included in, or eligible for, the National Register of Historic Places (NRHP). The National Register is administered by the National Park Service in conjunction with the state historic preservation offices (SHPOs). If potentially significant cultural artifacts are exposed by trenching or below-grade excavation during construction, Viresco would ensure that construction activity would cease within an appropriate radius (no less than 100 feet from discovery) until an archaeologist qualified under 36 CFR Part 61 could examine the artifacts and the SHPO was notified.
Air Emissions	Small Source Air Emissions Permit	UDEQ, DAQ	As a minor emitter for air pollutants the project would qualify for an exemption from a full air permit as a small source under regulations enforced by the UDEQ, DAQ.
Air Emissions	General Conformity	UDEQ, DAQ	A General Conformity Rule – Section 176(c) of the Clean Air Act (CAA) (42 U.S.C. 7506(c)) – requires federal agencies to perform conformity reviews to demonstrate that their actions do not impede State Implementation Plans (SIPs), plans that discuss local efforts to control air pollution. Because the proposed action would be sponsored and supported by DOE, the project must therefore be reviewed for general conformity. The potential air emissions from the project would be well below conformity threshold value established in 40 CFR 93.153(b). DOE determined that the project would be acceptable with respect to the General Conformity Rule and that a full conformity analysis would not be required for either site option (see Section 3.5, Air Quality).
Stormwater	Construction NPDES Permit	UDEQ, Water Quality Division	For construction of the Pilot Plant Viresco would file for authorization via UDEQ's construction General Permit to obtain stormwater management coverage and would adhere to NPDES regulations as required under this permit.

2.8 Consideration of Connected Actions

This EA addresses the impacts of DOE's proposed action and Viresco's proposed project and any connected actions in accordance with NEPA (40 CFR 1508.25(a)1) regardless of the entity undertaking those actions. A connected action is one that is closely related to DOE's proposed action or Viresco's proposed project, including an action that automatically triggers another action which may require an EA or EIS; an action that cannot or would not proceed unless another action is taken previously or simultaneously; or an action that is an interdependent part of a larger action and depends on the larger action for its justification.

Under the cooperative agreement with DOE, Viresco would operate the Pilot Plant and collect data for a series of test runs totaling 30 days of operation over a period of months. After the DOE's financial assistance ends, Viresco plans to seek additional funding for continued operations. Viresco's plans for operating its facility after DOE's involvement ends are not well-defined and would depend on the objectives the provider of any additional funding sought to achieve. However, it is likely that any future operations would continue to test the gasification process in order to improve its operation and output to achieve high process efficiency. Viresco has informed DOE that it intends to operate its Pilot Plant for a maximum of 130 days during a calendar year if it is able to obtain financing. These additional operations would need to be approved by UDEQ if emissions from the plant were to exceed those allowable under the small source exemption.

This EA analyzes the possibility that Viresco may operate its facility for as many as 130 days annually as a connected action after DOE's involvement ends. The potential impacts of this connected action are described below.

Viresco would continue to manage the Pilot Plant and monitor its operations and impacts during any periods of testing after DOE's involvement ends. Table 2.8-1 summarizes the potential changes in property features, feedstock, materials, and waste streams that Viresco anticipates if operations were extended. Items such as zoning, stack height, and support structures are not expected to change during any extended operations. Impacts due to continued operations of up to 130 days per year are addressed in each resource area in Chapter 3 as impacts attributable to this connected action.

Under the connected action, the total process water demand would increase by almost 1,000 gpd for a total demand of approximately 4,130 gpd, which would be supplied by the City of Kanab. This increase in water demand primarily results from the potential use of a steam propane reformer system to generate hydrogen onsite. The steam reformer operation would increase the water rate to the boiler to generate additional steam feed for the reformer. Similar to the proposed action, it is anticipated that some of the process water demand could be supplied by recycled process wastewater (up to 930 gpd). Potable water use from employees would remain at a rate of 250 gpd. The amount of water use would total approximately 570,000 gallons over a 130-day period, not considering the potential use of recycled process wastewater.

After DOE's involvement ends, Viresco is considering one of the following options to manage the process wastewater, depending on the water composition of the effluent: 1) construct an evaporation pond to collect part or all of the process wastewater for recycling; 2) transport, treat, and dispose of the process wastewater offsite, similar to that described under the proposed action; or 3) discharge to the City of Kanab's sanitary sewer system. Prior to storage in the evaporation pond or discharge into the public sewer system, Viresco would ensure that the process wastewater is tested and treated to standards as specified by the state (UDEQ, Division of Water Quality) and federal regulations. Should an evaporation pond be used for storage, Viresco would monitor the water quality and would include exclusionary devices (e.g., bird exclusion netting above the pond and chicken wire around the perimeter) if the monitoring results indicate that potential impacts to wildlife may occur. Potential impacts of these options for wastewater management are addressed as connected action impacts in Section 3.6, Groundwater, Section 3.8, Utilities, and Section 3.12, Surface Water. Viresco does not intend to pursue the options of using an evaporation pond or discharging to the public wastewater system during DOE's involvement (proposed action).

In the future, Viresco may also consider adding some form of gas cleanup processing and hydrogen separation. The details regarding these additional processes are not available at this time and would depend upon the availability of funds from other sources and the objectives those sources sought to achieve with their funding.

Therefore, potential impacts associated with these processes are not addressed in this EA, because they cannot be identified or analyzed at this time.

As already stated, electricity would be supplied by Garkane Energy. Viresco obtained a will-serve letter from Garkane Energy on August 8, 2011 (Appendix C) stating that Garkane Energy has the means to provide 225 kW of electricity to the proposed Pilot Plant. The letter explains that the provision of service would be contingent on easements, necessary system improvements, and a 3-phase 12.5 kilovolt (kV) power line constructed to the site. The implementation of these improvements would be connected actions for the proposed project. Improvements would consist of installing connection wiring between an existing power transmission line on Old Landfill Road adjacent to the proposed Pilot Plant site (see Figure 3-13) and the site proper. This connection wiring would cross Old Landfill Road and not require any new easements or rights-of-way to be acquired or disturbed. There would be no need for any upgrades to existing transmission features (Garkane Energy, 2011).

Table 2.8-1. Comparison of Proposed Project and Future Operations Components

Item	Proposed Project (maximum 30 days of operation)	Anticipated Future Operations (120 to 130 days of operation during a calendar year)
Property Features		
Site Property	Proposed project to take place on 1.5 acres of land, which is part of a 10-acre parcel to be leased by Viresco for 30 years.	Additional 0.2 acres estimated for additional equipment.
Impervious Land Coverage	Approximately 1 acre of impervious coverage.	Additional 0.2 acres estimated for additional equipment.
Hydrogen Supply System	Hydrogen generated offsite, trucked to site, and stored in a liquid hydrogen container.	A steam propane reformer may be installed. This would be used to produce hydrogen and carbon monoxide using propane and steam feeds.
Coal Biomass Fuel Feed	Would consist of coal slurry mixers, slurry pumps, storage bins.	Biomass and coal grinders, as well as a biomass slurry preparation system, would be added.
<u>Stormwater Detention Basin</u>	<u>A 144' by 54' stormwater detention basin, 2' deep, would be constructed on site to handle stormwater runoff.</u>	<u>No change.</u>
<u>Evaporation Pond</u>	<u>None</u>	<u>A 144' by 54' evaporation pond, 6' deep, may be constructed on site to handle process wastewater</u>
Feedstock and Material – Quantity and Source		
Coal	5 tpd, 150 tons for 30 days of operation; transported by truck.	5 tpd, 650 tons for 130 days of operation, transported by truck.
Lignocellulosic Biomass	The percentage of biomass in the feed to be decided later however it's anticipated to be 10 to 50 percent by weight; <u>transported by truck from southern Utah.</u>	No change to percentage used; however, additional types of biomass may be tested; <u>transported by truck from southern Utah.</u>
Process Water	<u>3,290 gpd, supplied by the City of Kanab (850 gpd may be supplied by recycled water)</u>	<u>4,130 gpd, supplied by the City of Kanab (930 gpd may be supplied by recycled water)</u>
Sand	Up to 300 tons for 30 days of operation transported by truck.	Up to 300 tons for 130 days of operation transported by truck.
Propane	660 gpd, Up to 19,800 gallons for 30 days of operation, purchased from Garkane Energy.	<u>1,934 gpd, Up to 251,420 gallons for 130 days of operation, purchased from Garkane Energy</u>
<u>Hydrogen</u>	<u>52 lbs/hr, hydrogen would be generated off-site, transported by truck.</u>	<u>Hydrogen would not be used in future operations. A steam propane reformer would be installed which would be used to produce</u>

Table 2.8-1. Comparison of Proposed Project and Future Operations Components

Item	Proposed Project (maximum 30 days of operation)	Anticipated Future Operations (120 to 130 days of operation during a calendar year)
		<u>hydrogen and carbon monoxide using propane and steam feeds.</u>
<u>Nitrogen</u>	<u>276 lbs/hr. nitrogen would be generated off-site, transported by truck.</u>	<u>No change</u>
Electricity	225 kW; supplied by Garkane Energy.	265 kW; supplied by Garkane Energy
Potable water	250 gpd; supplied by the City of Kanab.	No change as employee numbers would remain the same.
Products and Wastes – Quantity and Method of Treatment		
Process Wastewater	<u>Total of 850 gpd; either recycled within the process or transported offsite for treatment and disposal (the remaining process water used that does not discharge as effluent would exit the system as steam).</u>	<u>Total of 930 gpd; either stored in evaporation pond and recycled, transported offsite for treatment and disposal, or discharged into public wastewater system (the remaining process water used that does not discharge as effluent would exit the system as steam).</u>
Sanitary Wastewater	Sanitary/gray water 250 gpd, discharged to the City of Kanab sanitary sewer system.	No change as employee numbers would remain the same.
Solid Waste	1,168 pounds of ash per day <u>not including fines</u> , Total of 26 tons including <u>ash and fines</u> for 30 days of testing. Would be collected, analyzed, and disposed of <u>in a landfill permitted to accept the ash.</u>	Total of 113 tons, including <u>ash and fines</u> , for 130 days of testing. Would be collected, analyzed, and disposed of <u>in a landfill permitted to accept the ash.</u>
Air emissions	Most notable emission would be of carbon monoxide and is estimated to be less than 4 <u>tons</u> for the 30 days of operation; <u>4,690 gpd of steam would be generated and exit the gasifier flare and regenerator exhaust into the atmosphere.</u>	Most notable emission would be of carbon monoxide and is estimated to be less than <u>14 tons</u> for 130 days of operation; <u>4,920 gpd of steam would be generated and exit the gasifier flare and regenerator exhaust into the atmosphere.</u>

All necessary permits for additional construction, air emissions, and process wastewater would be obtained from federal, state, and local entities as needed before any changes are implemented at the proposed project site.

2.9 Resources not Considered in Detail

The following resources were determined to not be affected by the proposed project under any of the alternatives. NOTE: For the Final EA, the resources “Surface Water” and “Vegetation and Wildlife” are addressed in more detail in Sections 3.11, Biological Resources, and 3.12, Surface Water.

2.9.1 Wetlands and Floodplains

Based on National Wetland Inventory (NWI) mapping the proposed project site does not contain any wetland areas. Due to the natural arid climate and NWI results, as verified during a site visit, DOE decided that a wetlands determination was not needed and further analysis was not warranted. DOE also reviewed Flood Insurance Rate Maps (FIRM) as provided by the Federal Emergency Management Agency (FEMA) and determined that the project site is located outside of the 100- and 500-year floodplains and does not require further analysis.

2.9.2 Transportation and Traffic

Incremental increases in traffic from vehicles related to construction activities would primarily be limited to the immediate vicinity of the project site and would be temporary, lasting approximately 4 months. The construction workforce would consist of approximately 25 to 30 employees. The majority of construction activities are expected to occur Monday through Friday; depending on additional hours needed to complete critical

construction activities, additional construction work may occur during the weekend. Project-generated traffic volumes during construction would be produced by employees commuting to and from the site, as well as from trucks transporting materials, equipment, and supplies. It is estimated that there would be approximately 2 to 5 truck deliveries per day, on average, and up to 30 roundtrips per day from personally owned vehicles. In general, construction-related impacts to transportation resources include increased vehicular traffic that could lead to traffic congestion and delays and increased road hazards. Since the proposed Pilot Plant site is located in a characteristically rural area that experiences relatively low to moderate traffic flows, it is expected that the existing regional roads would have the capacity to handle the additional traffic volumes; also, because the increase in daily vehicles is relatively minor, occurrences of congestion or delays, if any, would be of short duration. The additional traffic from truck and construction worker vehicle trips to the site would be short term and easily accommodated within existing roadway and intersection capacity, such that only negligible impacts would occur.

The proposed site is located along Kaneplex Road which currently experiences a low volume of truck traffic related to deliveries to and returns from the Kane County Landfill. It is expected that low levels of additional traffic volumes on this road would also be generated from the Kane County Public Safety Facility, currently being constructed. The existing local roadway network easily accommodates this volume. Kaneplex Road was paved with asphalt from US 89A past the proposed site to the landfill during summer 2011. As shown in Table 2.9-1, the proposed action and connected action would be expected to result in incremental increases in traffic resulting from the truck transport of materials and waste and from automobiles of staff and visitors. It is estimated that, on average, approximately four to five truck deliveries would occur on a daily basis for either the proposed action or connected action. Additionally, 10 to 12 automobile roundtrips would occur on a daily basis. Note that the daily traffic estimates in Table 2.9-1 conservatively assume that the operations would occur on a continuous 30-day and 130-day basis. It is more likely that the total daily truck deliveries would be distributed over a greater number of days (i.e., span a period greater than 30 and 130 days) and would average less deliveries than what is projected in the table; the daily traffic from staff and visitors would only occur on days that the Pilot Plant would be operating. Because the potential increase in daily traffic is relatively small and the total traffic volumes would remain well within the capacity of the existing local roadway system, it is expected that the project would have a negligible impact to the surrounding community.

Table 2.9-1. Projected Traffic Volumes Comparison for Proposed Action and Connected Action

	<u>Proposed Action (30-day operation)</u>	<u>Connected Action (130-day operation)</u>
<u>Material / Waste Deliveries</u>		
<u>Coal</u>	<u>8 roundtrips</u>	<u>33 roundtrips</u>
<u>Biomass</u>	<u>1 to 4 roundtrips</u>	<u>3 to 16 roundtrips</u>
<u>Sand</u>	<u>18 roundtrips</u>	<u>24 roundtrips</u>
<u>Propane</u>	<u>3 roundtrips</u>	<u>12 to 42 roundtrips</u>
<u>Hydrogen</u>	<u>4 roundtrips</u>	<u>4 roundtrips</u>
<u>Nitrogen</u>	<u>3 roundtrips</u>	<u>12 roundtrips</u>
<u>Ash and wastewater solids disposal</u>	<u>2 roundtrips</u>	<u>8 roundtrips</u>
<u>Process wastewater removal</u>	<u>0 to 5 roundtrips</u>	<u>0 to 22 roundtrips</u>
<u>Miscellaneous</u>		
<u>Employees</u>	<u>10 roundtrips per day</u>	<u>10 roundtrips per day</u>
<u>Visitors</u>	<u>20 roundtrips</u>	<u>60 roundtrips</u>
<u>Minor deliveries</u>	<u>50 roundtrips</u>	<u>100 roundtrips</u>
<u>TOTAL *</u>	<u>89 to 97 roundtrip deliveries by trucks = 5 truck deliveries/day*</u> <u>10 to 12 roundtrip cars/day</u>	<u>196 to 261 roundtrip deliveries by trucks = 4 truck deliveries/day*</u> <u>10 to 12 roundtrip cars/day</u>

*Conservatively assumes that truck deliveries would be limited to weekdays and would occur on a continuous daily basis; therefore, assumes that deliveries would occur over 20-day and 80-day periods under the proposed action and connected action, respectively

3.0 EXISTING CONDITIONS AND ENVIRONMENTAL CONSEQUENCES

This section describes the existing physical, cultural, social, economic, and biological conditions within the vicinity of the proposed Pilot Plant and the environmental consequences of the proposed project and the no action alternative. Where possible, potential impacts associated with the proposed project and the no action alternative are quantified. In some cases, it is not possible to quantify impacts; therefore, a qualitative assessment of potential impacts is presented. The following descriptors are used qualitatively to characterize impacts on respective resources:

- Beneficial – Impacts would benefit the resource.
- Negligible – No apparent or measurable impacts are expected; may also be described as “none” if appropriate.
- Minor – The action would have a barely noticeable or measurable adverse impact on the resource.
- Moderate – The action would have a noticeable or measurable adverse impact on the resource. This category could include potentially significant impacts that would be reduced to a lesser degree by the implementation of mitigation measures.
- Substantial – The action would have obvious and extensive adverse effects that could result in potentially significant impacts on a resource despite mitigation measures.

3.1 Land Use

3.1.1 Existing Conditions

During the public scoping process, comments were received from several individuals concerned about the re-zoning of the site for the proposed Pilot Plant. The proposed site is within the City of Kanab, approximately 2.5 miles south of the downtown area. The land is administered by Utah SITLA and is part of a 10-acre parcel to be leased to Viresco. The terms and conditions of this lease have been negotiated, but it has not been signed pending DOE’s funding decision. The project site consists of undeveloped land containing shrubby and herbaceous vegetation. Land uses on adjacent properties all consist of undeveloped land similar in nature to the project site.

Land developments in the general area of the project site include the Kane County Public Safety Facility (Figure 3-1) that is currently under construction approximately 0.5 mile to the southeast, Kane County Landfill (Figure 3-2) approximately 1.0 mile to the southeast, the Kanab Municipal Airport (Figure 3-3) approximately 0.5 mile to the northwest, the Kanaplex Rodeo Grounds (Figure 3-4) and facilities (including a shooting range), which was relocated to the west of the Kane County Public Safety Facility in summer 2011, and two cellular telephone towers. One of the towers is to the east of the site between the safety facility and the landfill (approximately 300 feet in height) and the other tower is to the east of the landfill (approximately 140 feet in height). There are also three cellular telephone towers along US 89A adjacent to or on the airport, which range in height from 24 to 50 feet in height (Antenna Search, 2009).

Figure 3-5 shows the locations of the proposed Pilot Plant and surrounding structures, including the facilities described above. There are no private residences located within 0.5 miles of the proposed Pilot Plant. Two former residential buildings currently associated with construction for the Jackson Flat Water Supply Storage Project are located approximately 0.3 mile north of the site. A residential farm property in Utah is located off US 89A approximately 0.6 mile directly west of the site. A few residences in Arizona east of US 89A are just outside the 0.5 mile radius with the closest being approximately 0.55 mile southwest of the proposed Pilot Plant. Properties in Arizona are screened from visibility of the site by a topographic ridge along the state border. Additional residential and non-residential buildings are located within approximately 1 mile of the proposed Pilot Plant site as indicated in Figure 3-5. As described in Section 2.5.2, the proposed site is also less than 2 miles from the northeastern boundary of the Kaibab Paiute Reservation in northern Arizona.



Figure 3-1. Kane County Public Safety Facility Construction, looking Northwest from Kaneplex Road



Figure 3-2. Kane County Landfill (east end of Kaneplex Road)



Figure 3-3. Kanab Municipal Airport



Figure 3-4. Kanplex Rodeo Grounds

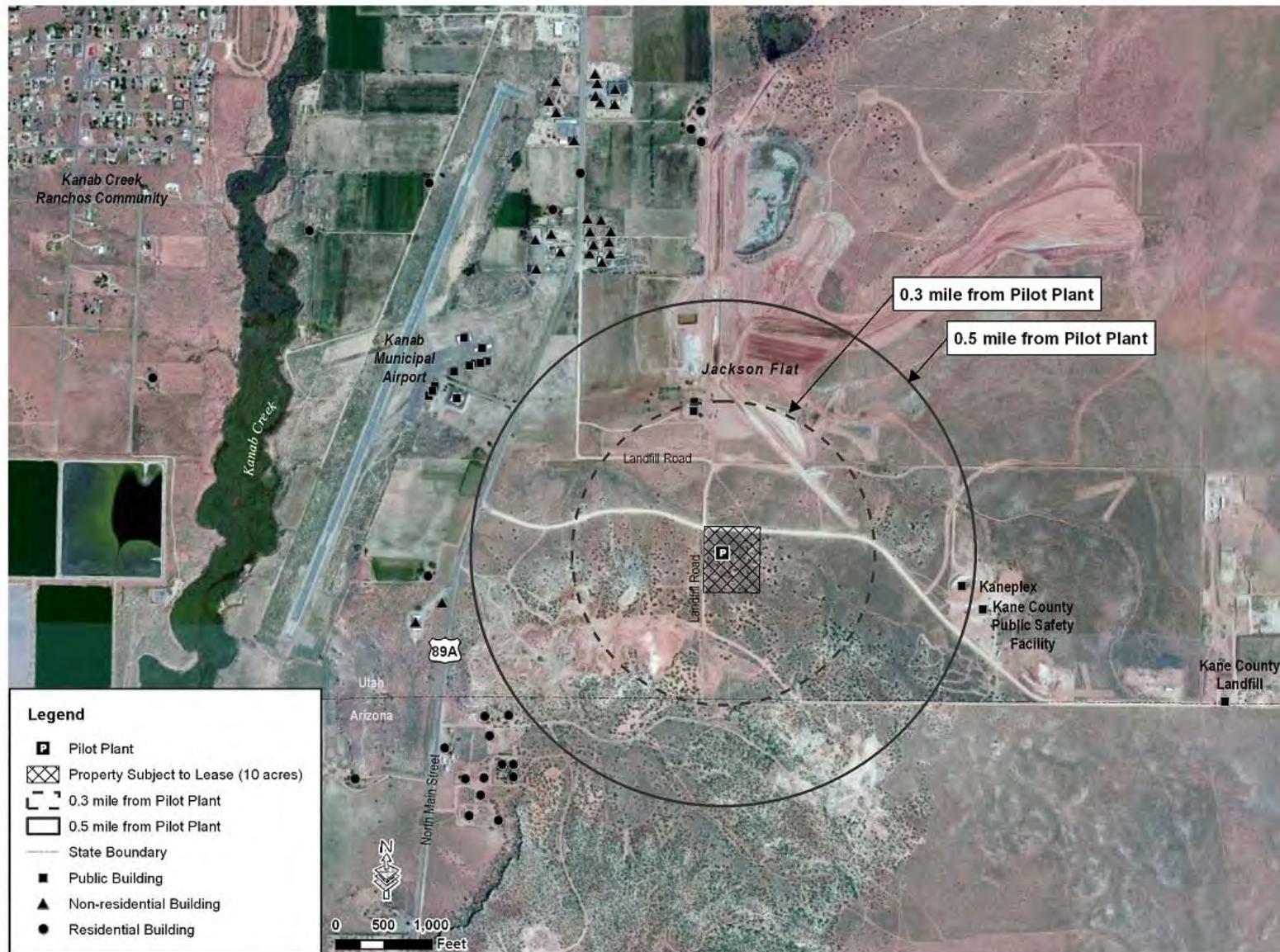


Figure 3-5. The Proposed Pilot Plant Site and Nearby Buildings

Viresco submitted an application to the City of Kanab to re-zone the 10-acre property from RA (Rural Residential/Agricultural) to M2 (Light Manufacturing) on October 13, 2010, which was approved by a unanimous vote at the Kanab City Council Meeting on November 9, 2010 (City of Kanab, 2010). The M2 zoning designation is meant “to provide space for small warehousing, light manufacturing, fabrication, wholesaling, service and other similar commercial establishments which are combined with manufacturing or warehousing uses and to locate these establishments in a location compatible with one another and where they are convenient to the commercial areas in the City of Kanab”. The Kanab Land Use Ordinance does not include permitted uses that would specifically address the project; however, the most applicable use would be “miscellaneous light manufacturing”, which is permitted in the M2 designation. Structures within 100 feet of adjoining zones are not allowed to have heights greater than those allowed in the adjoining zone. Properties adjacent to the site are zoned RA, which allows buildings up to a height of 40 feet. A conditional use permit was approved by the City of Kanab Planning Commission on July 20, 2011 enabling Viresco to exceed height limits otherwise applicable to the Pilot Plant.

Properties adjacent to the 10-acre parcel to be leased by Viresco are zoned RA. Kanab’s future land use map, dated 2007, has the entire area south of the northern boundary of the airport on the east side of US 89A planned for the RA zoning designation or Planned Parks; however, this area also includes the properties containing the safety facility (under construction), the landfill, and the rodeo facilities. Construction has commenced on a new surface water reservoir (the Jackson Flat Water Supply Storage Project) on Jackson Ranch approximately 0.25 mile north of the site (Figure 3-6). Kanab is planning to develop recreational facilities around the reservoir including three parks, the closest of which would be approximately 0.6 mile to the northeast of the site. In addition, an Outfitter’s Post, race track, archery and shooting range, and rodeo are also part of the plans; however, these plans are conceptual and a more definitive plan for the recreational areas is expected at a later date (City of Kanab, 2009a).



Figure 3-6. Telephoto View of Jackson Flat Water Supply Storage Project Construction from Proposed Pilot Plant Site

3.1.2 Environmental Consequences of the Proposed Project

The proposed project would result in the conversion of approximately 1.5 acres of undeveloped vegetated land to facilities to support the Pilot Plant (see Figure 2-3, previous). Although surrounding lands are zoned RA, the properties in the immediate vicinity of the site are undeveloped, and an existing landfill and safety facility (under construction) are in close proximity. Thus, construction and operation of the Pilot Plant would be considered

compatible with existing land uses in the area; however, Kanab's future plans for the area within 0.25 miles to the north of the site include recreational land uses. Use of the site for an industrial facility (the Pilot Plant) would not be considered compatible with recreational sites, such as parks, primarily due to diminished aesthetic quality (see Section 3.2, Aesthetics).

Aside from adverse aesthetic impacts, construction and operation of the Pilot Plant would not be expected to cause any physical alterations to adjacent properties. Offensive odors are not anticipated (*see Section 3.5.2*), but any odors would be expected to dissipate effectively before reaching any residential areas *that are at least 0.5-mile away from* the Pilot Plant. *Likewise, noise from the site would not be intrusive to residential receptors (see Section 3.9.2).* Viresco would comply with Chapter 10 of Kanab's Land Use Ordinance, which sets restrictions on nuisances (e.g., glare and odors) and physical hazards on industrial properties (City of Kanab, 2009). In addition, the Pilot Plant *flare* stack could be up to 67 feet in height, which required a conditional use permit issued by the City of Kanab Planning Commission (July 20, 2011) to exceed the 40-foot height limit. *The conditional use permit also requires a flare enclosure that could cause the maximum height of the flare stack to be approximately 72 feet. The total heights of the flare stack, including the flare enclosure, cannot exceed 72 feet, while the major part of the structure would be about 60 feet high.*

Although adjacent properties are zoned *RA*, they are currently unoccupied, and the presence of the safety facility and landfill nearby likely makes this location undesirable for residential use regardless of the potential presence of the Pilot Plant. In addition, the plans for recreational facilities in the area are conceptual and Kanab can account for the presence of the Pilot Plant when making final plans (e.g., they could locate parks to the north or east of the reservoir, creating an increased distance to the Pilot Plant). For example, construction is nearing completion for the Kane County Public Safety Facility on land that had been planned for recreational use. It is important to note that Kanab City Planning and Zoning Department approved the zoning change for the site to M2; thus, that department is aware of the project and can plan future land uses in the area accordingly.

Overall, *long-term* minor adverse impacts to adjacent land uses would be expected for the 30 days of operation during the period of the cooperative agreement with DOE due to the short and intermittent operational duration. The Pilot Plant would be a permanent, non-natural object in the viewshed; however, operational effects would be of a very short and intermittent duration.

Should future operations include operating the Pilot Plant for up to 130 days annually for an undetermined period into the future, impacts would be *long-term and* moderate, as any possible operational effects would occur more often and for a longer period of time.

3.1.3 Environmental Consequences of the No Action Alternative

Under the no action alternative, construction and operations would not occur; therefore, there would be no changes to land uses as compared to the existing condition.

3.2 Aesthetics

3.2.1 Existing Conditions

During public scoping, many individuals expressed concerns about the visibility and potential aesthetic impacts of the Pilot Plant. The proposed 1.5-acre project site is within the City of Kanab, approximately 2.5 miles south of the downtown area. *The closest residential property in Utah (a farm) is located approximately 0.6 mile from the site; the closest residence in Arizona is located approximately 0.55 mile from the site as illustrated in Figure 3-5.* Grand Staircase-Escalante National Monument's far southwestern boundary terminates approximately nine miles to the east of the site and Coral Pink Sand Dunes State Park is approximately 10 miles to the west with a mountain range in between.

Construction has commenced on a new surface water reservoir (the Jackson Flat Water Supply Storage Project) on Jackson Ranch approximately 0.25 mile north of the site. Kanab is planning to develop recreational facilities around the reservoir including three parks, the closest of which would be approximately 0.6 mile to the northeast of the site; however, this plan is conceptual and a more definitive plan for the recreational areas would be prepared (City of Kanab, 2009a). Other land developments in the general area of the project site are described in Section 3.1, above.

Aesthetic impacts can occur at night due to outdoor lighting. Impacts caused by outdoor lighting are generally attributable to glare, light pollution, and light trespass and encroachment. Glare ranges in severity from unwanted brightness that creates a nuisance to levels causing physical discomfort or disability. Light pollution is generally associated with ground-reflected light, which is scattered by particles and results in the sky glow found in all urban areas. Light trespass or encroachment, like nuisance glare, results from unwanted light affecting an adjacent property or nearby receptors. To preserve night skies, the City of Kanab Land Use Ordinance prohibits direct or sky-reflected glare, whether from flood lights or high temperature processes, excluding outdoor signs or lighting of buildings and grounds for protective purposes. Parking lot lighting also must be “downlighted” so that light does not trespass on adjoining properties (City of Kanab, 2009). In addition, the conditional use permit acquired from the City of Kanab Planning Commission requires a flare enclosure at the end of the exhaust stack further preserving night skies.

3.2.2 Environmental Consequences of the Proposed Project

During the 4-month construction period, *short-term* aesthetic impacts would occur to *residences in the viewshed of the site. The most populous residential community in the viewshed of the proposed Pilot Plant site is Kanab Creek Ranchos, located between 1.3 and 2 miles to the northwest of the site (see Figure 3-5) at the elevated base of a cliff formation. Construction at the site would also be visible from residential and non-residential buildings along US 89A to the west and north of the site and to vehicles on US 89A. However, the site would not be visible from downtown Kanab properties, because views would be obstructed by buildings and trees. Likewise, Pilot Plant construction would not be visible from most properties in Arizona, because views to the north are screened by a topographic ridge along the state border.*

Adverse aesthetic factors often consist of construction-related noise, truck traffic, dust, and the facility itself as it is constructed. However, based on the distance from the site to the nearest residential *receptors (more than 0.5 mile)*, noise, traffic, and dust impacts would not be anticipated as described respectively in Sections 3.9.2, 2.9.2, and 3.5.2. The viewshed *from Kanab Creek Ranchos* currently contains structures in the foreground associated with Kanab Municipal Airport as well as moving vehicles and airplanes. In addition, the Kane County Public Safety Facility and Kane County Landfill facilities are viewable in the background. Thus, the existing viewshed from the most populous residential area currently contains several manmade elements, such that the construction of the Pilot Plant would not be as apparent (Figure 3-7). Overall, *short-term* minor aesthetic impacts would be expected during construction considering the distance to the site.

During operation of the facility, impacts would likely be less intrusive on the residential area to the northwest as fewer activities would be performed at the site. Overall, *long-term* aesthetic impacts would consist of the visible presence of the facility (see Figure 2-3, previous), a potential minor water vapor plume emission from the stack during various weather conditions, and truck traffic at the site. The proposed office/control room/laboratory facility would likely be marginally noticeable, as it would be a relatively small building (19 feet high). The support structure containing the hydrogasifier, fluidized bed regenerator, stack, etc., would be the most noticeable structure, as the stack would be approximately 67 feet in height (*not to exceed* 72 feet with the flare enclosure), while the major part of the structure would be about 60 feet high. The structure would generally look like scaffolding with piping. The structure would have a somewhat small footprint (approximately 680 square feet); thus, it would be visible from the residential vantage points and would look a bit different from other developments in the area, but it would not represent a major change in aesthetic character considering distance and other manmade features in the area.

Figure 3-7 shows a view of the Pilot Plant site and nearby facilities and features from the Kanab Creek Ranchos community. This figure includes a conceptual drawing of the Pilot Plant at approximate scale in relation to nearby features and the distance from the vantage point. The color of this representation was selected as Carlsbad Canyon (2.5Y 6/2) from the “Standard Environmental Colors for the Painting of Federal Oil and Gas Facilities” by the Rocky Mountain Regional Coordinating Committee for the Bureau of Land Management (BLM), which is expected to be comparable to the final color scheme. Gases would be flared from the stack; however, the flame would be shielded from view. As per the conditional use permit approved by the City of Kanab Planning Commission, the flare stack would be painted an earth tone color to be approved by the Kanab City building inspector to aesthetically blend in to the viewshed.



Figure 3-7. View of Pilot Plant Site, Kanab Municipal Airport, Kane County Public Safety Facility, and Kane County Landfill from Kanab Creek Ranchos Neighborhood Looking Southeast

Kanab's future plans for the area within 0.5 miles of the north of the site include recreational land uses associated with the new surface water reservoir project (Jackson Flat Water Supply Storage Project). Development of the site for the Pilot Plant would represent an obstruction to natural views to the south from these recreational areas. As described in Section 3.1, the plans for recreational facilities in the area are conceptual and Kanab can account for the presence of the Pilot Plant when making final plans and designs.

A potential minor water vapor plume emission may be visible from the surrounding area when operating under certain weather conditions. However, as the Pilot Plant would operate intermittently and over a relatively short duration (30 days of operation under the cooperative agreement with DOE), the occurrence of a visible vapor plume would be occasional and limited in duration. The inclusion of a pilot burner device in the flare design would ensure that odorous gases would be combusted efficiently in the flare as discussed in Section 3.5.2.4. Thus, offensive odors are not anticipated, but any odors would be expected to dissipate effectively before reaching residential areas which are no closer than 0.5 mile away. In addition, Viresco would comply with Chapter 10 of Kanab's Land Use Ordinance, which sets restrictions on nuisances (e.g., odors) and physical hazards on industrial properties (City of Kanab, 2009).

Overall, minor *long-term* adverse aesthetic impacts to the planned recreational facilities would be expected for the 30-day operational period of the proposed project due to the short and intermittent operational duration. The Pilot Plant would be a non-natural object in the viewshed; however, operational effects would be of a very short and intermittent duration. Should Kanab choose to locate recreational facilities further from the Pilot Plant than current plans indicate, impacts would be less; however, it is currently unknown what the final locations would be.

Nighttime lighting at the Pilot Plant may be noticeable at the residential properties to the northwest, though several other facilities in the area, most notably the airport, also have light sources, as does the new safety facility; therefore, the overall effect on views would be minor. Light sources would likely be more noticeable from the planned recreational facilities around the future reservoir, but the final layout of these facilities is not currently known. The effect of nighttime sky glow from the proposed Pilot Plant would be minimal, as all external lighting would be downlighted and shielded to ensure that generated light does not trespass on adjacent lands and Viresco would comply with the Kanab Land Use Ordinance. Only reflected light from the ground or indirectly from vertical wall surfaces would be able to affect the surrounding environment rather than direct rays from the light sources. Reflectance values off the ground and vertical surfaces on buildings would be low as the paved areas would be a dark colored asphalt and the walls of the building would be painted so that reflectance values would be low (see Figure 2-3, previous). Lighting on the tallest structures would be as required by the Federal Aviation Administration due to the proximity of the Kanab Municipal Airport. Overall, lighting at the Pilot Plant would cause long-term minor impacts on nearby receptors and dark night skies.

No impacts on national or state parks, monuments, etc. would be expected. The Pilot Plant would not be visible from such distant locations as Grand Staircase-Escalante National Monument and Coral Pink Sand Dunes State Park.

Should future operations include operating the Pilot Plant for up to 130 days annually, impacts would be long-term and moderate, as any possible operational effects discussed above would occur more often and for a longer period of time.

3.2.3 Environmental Consequences of the No Action Alternative

Under the no action alternative, construction and operations would not occur; therefore, there would be no changes to the local aesthetic character as compared to the existing condition.

3.3 Geology and Soils

3.3.1 Existing Conditions

3.3.1.1 Geology

The proposed project site is located within the Colorado Plateau Physiographic Province. The Colorado Plateau is a physiographic province of the U.S. roughly centered on the "Four Corners" area within western Colorado, northwestern New Mexico, southeastern Utah, and northern Arizona. About 50 percent of the surface of the Colorado Plateau Region is administered by the BLM, Forest Service, National Park Service, or other federal

agencies. About 23 percent of the area consists of tribal lands; although those lands are held in trust by the U.S. Government, they are not considered federal lands and their coal resources are not included in this study. About 26 percent of the region is administered by state agencies or is privately owned (USGS, 2008a).

The terrain is characterized by broad plateaus, ancient volcanic mountains and deeply dissected canyons including the Grand Canyon. The area is semiarid, sparsely vegetated, and sculpted by the Colorado River and its tributaries, the Green, Little Colorado, and San Juan rivers. The region contains substantial amounts of oil, gas, coal, oil shale, and uranium resources and includes the San Juan, Uinta-Piceance, and Paradox Basins and Wasatch, Black Mesa, and Kaiparowits plateau areas.

The Colorado Plateau province is a broad area of regional uplift in southeastern and south-central Utah characterized by essentially flat-lying Mesozoic and Paleozoic sedimentary rocks. Scattered Tertiary and Quaternary volcanic rocks are present on the western margin of the Colorado Plateau in south-central Utah, and some Tertiary intrusive bodies are present in southeastern Utah (UGS, 2011). A generalized stratigraphic section for the Colorado Plateau is shown in Figure 3-8.

The Pilot Plant site would be located on gravel, sand, silt and clay deposits that were eroded from the surrounding cliffs and deposited by running water. The geologically young, alluvial deposits are weakly cemented and are typically 16-66 feet thick. The bedrock beneath the unconsolidated material is the Upper Triassic Chinle Formation, which contains multicolored mudstones interbedded with sandstones (USGS, 2004).

3.3.1.2 Seismic Conditions

Concerns were raised during the public scoping process about the potential for seismic effects on the safety of the proposed Pilot Plant. Utah experiences many small, low-magnitude earthquakes each year that are recorded by seismologists, but go unfelt by most people. However, there have been larger, damaging earthquakes in the past, such as the Hansel Valley earthquake in 1934 and the Richfield earthquake in 1901 (UDNR/UGS, 1997).

As displayed in Figure 3-9, the nearest seismic source to the proposed project site is the northern section of the Sevier (Toroweap) Fault, located approximately 11 miles west of the site (UDNR/UGS, 2008). The Sevier/Toroweap fault is one of three major sub-parallel, generally north trending faults (along with the Hurricane fault to the west and Paunsaugunt fault to the east) in northwestern Arizona and southwestern Utah that define the transition between the Basin and Range Province to the west and the Colorado Plateau to the east (UDNR/UGS, 2008). Through the National Earthquake Hazard Reduction Program, the USGS generated a geologic seismic hazard probability database to estimate the potential for earthquakes in the U.S. The database uses known fault sequences and historical earthquake data. Models generated from the database show the probability of a damage-inducing earthquake at a specific location. Through this database the U.S. Geological Survey has produced seismic hazard maps that are used to update seismic design maps and provisions contained in building codes, to provide a the basis of design requirements for highway bridges, to set property insurance rates, to estimate landslide potentials of hillsides, and to set waste-disposal facility standards that ensure safety. FEMA also uses the maps to plan allocation of funds for earthquake education and preparedness (USGS, 2001).

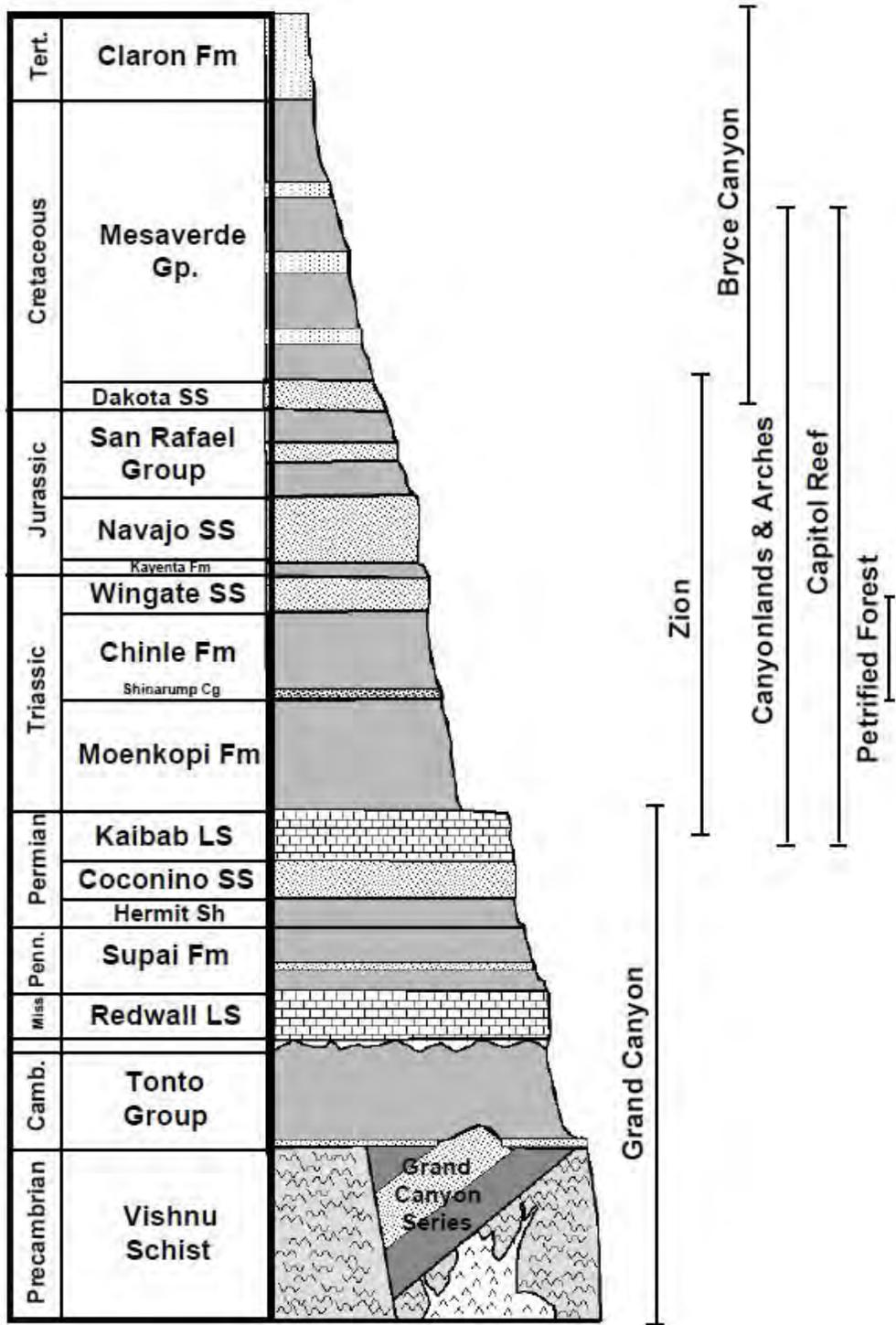
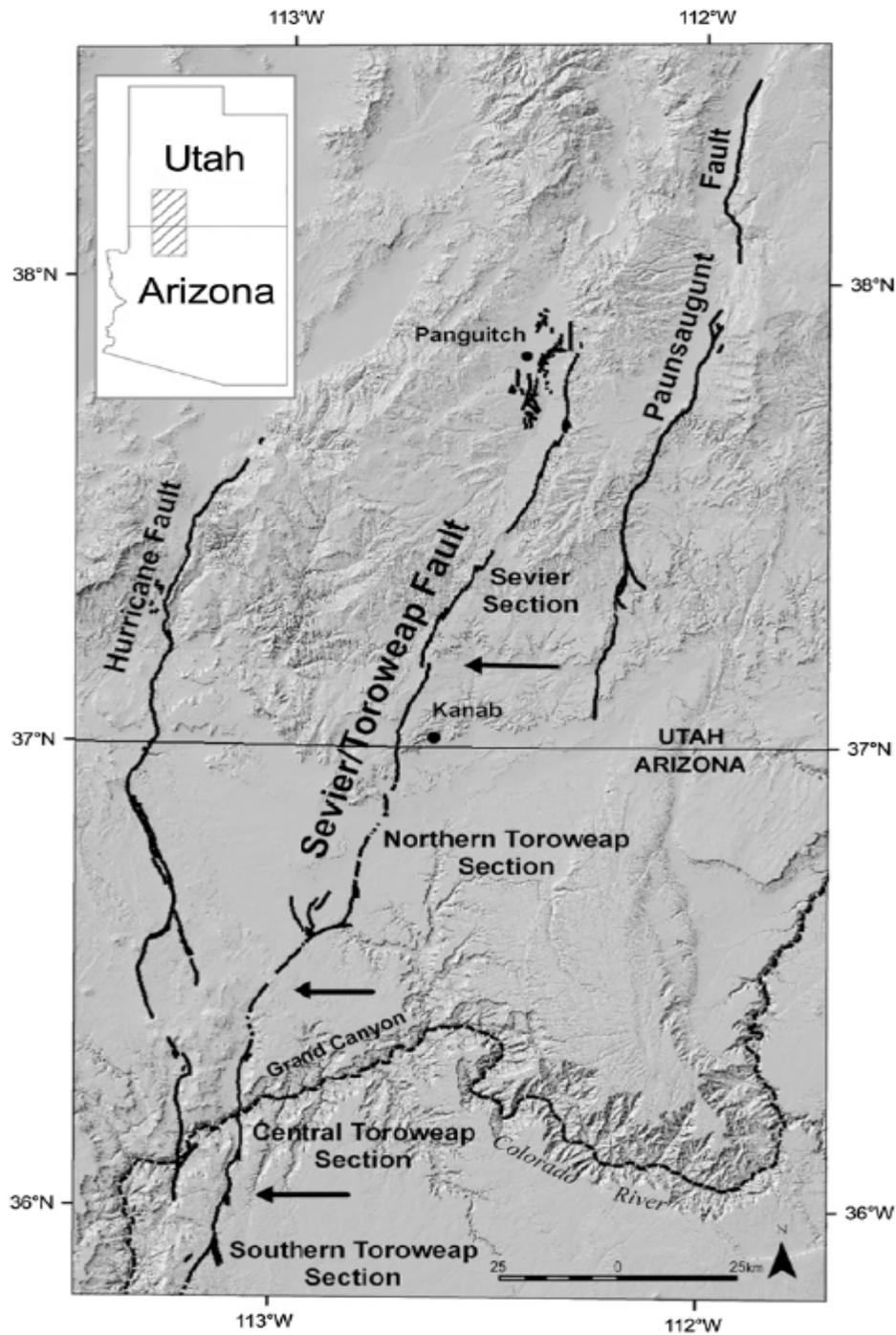


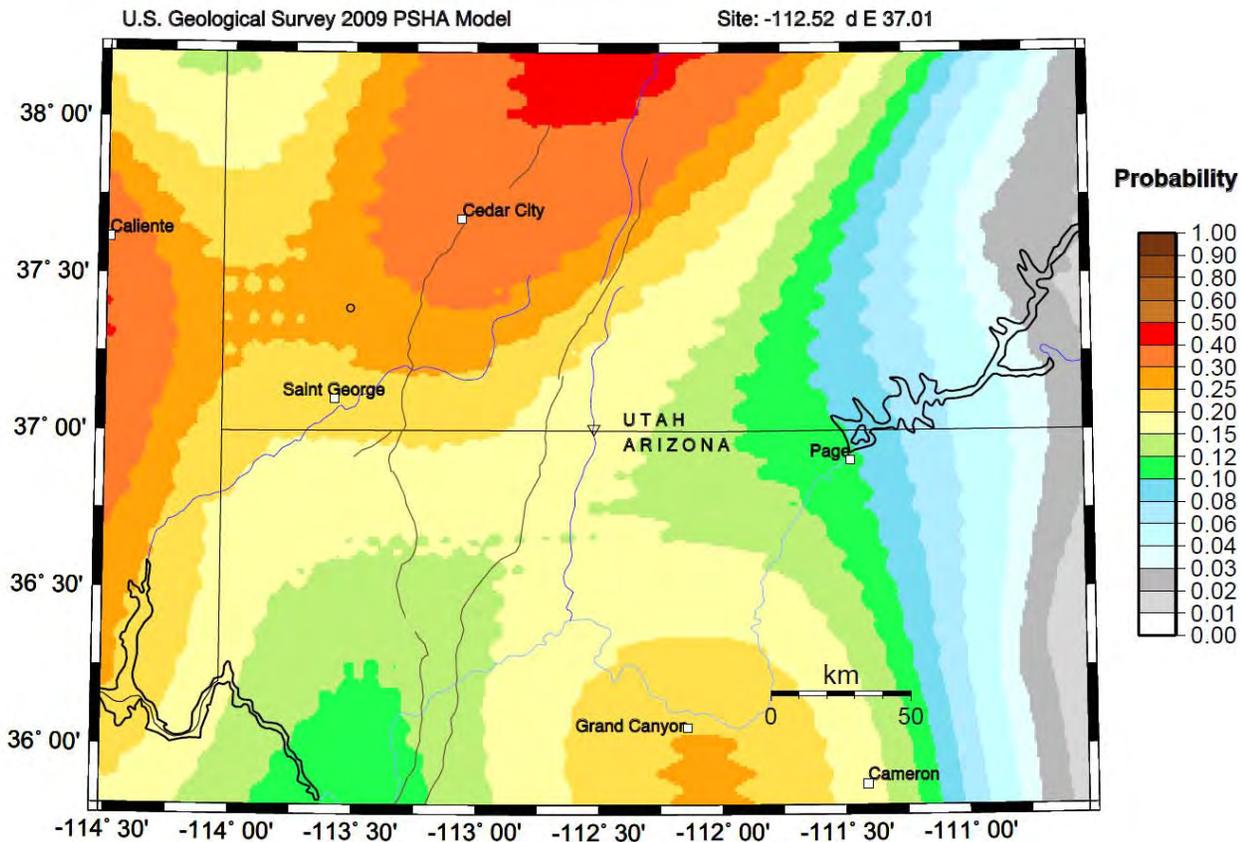
Figure 3-8. Generalized Stratigraphic Section of the Colorado Plateau



Source: UDNR/UGS, 2008

Figure 3-9. View of existing faults in southern Utah and northern Arizona

According to this database, in the next 30 years there is a 15 to 20 percent chance that a magnitude 5.0 or greater earthquake would occur within 30 miles of the project site (Figure 3-10) (USGS, 2011). However, the physical damage from a local earthquake is dependent on the magnitude of the seismic event, a location’s distance to the epicenter, the stability of the ground and the structural integrity of the building. A calculation called the Peak Ground Acceleration (PGA) predicts the amount of shaking a location could feel from any earthquake in the area, based on a model of the predicted size of earthquakes that have a 10 percent chance of occurring in the next 30 years. The PGA value for Kanab is about 7 percent, which means there is a 10 percent chance that in the next 30 years, Kanab could be shaken of a force of 7 percent times the coefficient of gravity (USGS, 2008b). This amount of shaking would classify as “moderate” with “very light” potential damage, primarily to poorly built structures.



Source: USGS, 2011

Figure 3-10. Probability of an Earthquake within 30 years and 30 Miles

3.3.1.3 Soils

The Federal Farmland Protection Policy Act (Public Law 97 98; 7 U.S.C. 4201 et seq.) has been enacted in an effort to document the potential impacts to agricultural land through the NEPA process and to preserve land with the potential to consistently produce food and raw materials. The supply of high quality farmlands is limited; therefore, the USDA encourages the preservation of soils classified as prime farmland, or soils used for agriculture unique to the state. Prime farmland soils are defined by the USDA as: “land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and that is available for these uses. It has the combination of soil properties, growing season, and moisture supply needed to produce sustained high yields of crops in an economic manner if it is treated and managed according to acceptable farming methods.” (USDA, 2010). There are only 16 acres in Kane County designated as Prime and

Unique Farmland with the classification of “Prime Farmland if Irrigated” (USDA/NRCS 2005). The proposed project site does not contain any Prime and Unique Farmland.

The soils on the proposed project site have not been mapped by the Natural Resources Conservation District (NRCS). However, a geotechnical soils analyses was completed by TC Engineering, PC on December 2, 2010 for the proposed project site. The investigation consisted of a review of the surface as well as subsurface conditions encountered in three test trenches dug to a depth of 6.5 feet (see Table 3.3-1) throughout the 1.5 acre parcel to be disturbed for the Pilot Plant. The soils at the proposed project site consist of Silty Sands (SM), and Sandy Clays (CL) with and without base material (TC, Engineering, PC, 2010).

Table 3.3-1. Soils Encountered in Test Trenches

Test Trench Location	Northwest	Center	Southeast
Depth (feet)	Soils Type	Soils Type	Soils Type
0 - 0.5	Topsoil	Topsoil	Topsoil
0.5 – 3	Moist Red Silty Sand (SM)	Moist Red Silty Sand (SM)	Moist Red Silty Sand (SM)
3 – 4	Moist Red Silty Sand (SM)	Moist Red Silty Sand (SM)	Stiff sandy clay (CL) with gypsum
4 -6.5	Refusal	Refusal	Stiff sandy clay (CL) with gypsum
6.5			Refusal

Source: TC, Engineering, PC, 2010

3.3.2 Environmental Consequences of the Proposed Project

3.3.2.1 Geology

There would be no impacts to geologic resources from construction of the project as it is not expected that any drilling or extensive excavating would be required at this site. Construction would not induce seismicity, nor would it impact high-value or unique geologic resources so that they are inaccessible, or cause measurable displacement of the ground surface. The area is in an increased risk for seismic activity; however, the plant would be built with the appropriate measures for industrial structures in an area subject to the level of seismic risk.

3.3.2.2 Soils

Under the proposed project, a direct permanent adverse impact would occur to the approximate 1.5 acres of soils associated with the project site. These soils would be graded for construction of the proposed project, which would require paving and establishment of impervious surface to support the plant and associated infrastructure (i.e., entrance roads, parking, and stormwater management). These impacts, however, would be localized and minor. Soil disturbance as a result of grading, excavation for the foundation and other construction activities increases the potential that the topsoil would experience increased erosion. Prior to construction, a NPDES permit would be required from the state authority regulating water quality in runoff from construction sites. The permit requires operators to implement stormwater controls and develop a SWPPP, which includes BMPs to prevent sediments and other pollutants associated with construction sites from being discharged in stormwater runoff. Potential BMPs include sequestering topsoil as needed, erecting silt fences, and temporarily seeding bare soils areas with native vegetation. Viresco would ensure that the construction contractor implements erosion BMPs to reduce the overall impacts on soils to minor and temporary during construction.

After construction, disturbed areas, such as equipment laydown areas that are not part of the active facility, would be seeded with appropriate vegetation as part of the SWPPP to prevent erosion and sedimentation of exposed soils.

There would be no impact to prime farmlands as soils at the site are characterized as silty sands and sandy clay, which are not designated as prime farmland soils. The gentle topography and composition of the soils, combined with the erosion BMPs to be described in the SWPPP, would reduce the potential impacts to soils to minor during construction.

3.3.3 Environmental Consequences of the No Action Alternative

Under the no action alternative, ground disturbance associated with construction of the proposed Pilot Plant would not occur and geologic resources would remain in place; thus, no impacts would occur from the proposed project.

3.4 Cultural Resources

3.4.1 Existing Conditions

Bighorn Archaeological Consultants, L.L.C., completed a cultural resource inventory of the Kanab Steam Hydrogasification Pilot Plant project in Kane County, Utah. The inventory was undertaken at the request of Viresco to assist the Utah SITLA in fulfilling requirements under various federal and state environmental protection laws, including the NHPA, NEPA, and Utah Antiquities Act (UCA 9-8-404).

Prior to initiating fieldwork, Bighorn conducted a records search through the Utah Division of State History on September 15, 2010 for reported projects and previously recorded cultural resources. The search revealed 26 previously recorded cultural resources and 19 previous inventories within one mile of the project area (Nash et al. 2010: Tables 2, 3). Cadastral plats/General Land Office maps and other historic maps of the area were also reviewed for the presence of historic features, such as roads, ditches, cabins, and trails. Results of the literature review and file search indicated that one previously recorded cultural site, 42KA5613, was located within the proposed project area.

A Class III cultural resource inventory of the area of potential effect for the proposed project was completed on September 29, 2010 (Nash et al. 2010). During the inventory, personnel examined the project area using pedestrian transects spaced no more than 15 m (50 feet) apart. The purpose of the inventory was to identify all cultural resources within the project area, evaluate their eligibility for inclusion in the NRHP, and assess the potential impacts of the undertaking on eligible properties.

Examination of the project area resulted in the discovery and documentation of one new cultural site, 42KA6967, and the previously recorded cultural site, 42KA5613, was also relocated. Site 42KA6967 is a large aboriginal open lithic scatter of unknown date and cultural affiliation as no diagnostic artifacts were found. It is located within a 272 m by 141 m (22,695 m²) area on a low ridge north of the Shinarump Cliffs and south of Jackson Flat. Soil on the site consists of very fine well sorted tan sand. Vegetation in the area includes scattered big sagebrush, sand sagebrush, juniper, and sparse rabbit brush. The site has been impacted by erosion, grazing, and recreational use of the area.

Site 42KA5613 was originally recorded by Rainbow Country Archaeology in 2000 as an historic trash scatter dating from the mid to late twentieth century. The site was revisited by Bighorn in 2010 and a site form update was completed. The site is located within a 58 by 32 m (1,228 m²) area to the south of the Kaneplex road on the northern side of a gradually sloping low knoll and above an ephemeral drainage to the north of the Shinarump Cliffs and south of Jackson Flat. Soil on the site consists of fine tan sand with sparse gravels. Vegetation in the area includes scattered juniper, low sagebrush, sand sagebrush, prickly pear and cholla cacti, yucca, and various bunch grasses and forbs. The site has been impacted by erosion, grazing, and recreational use of the area.

Bighorn considered both sites to be not eligible to the NRHP. In late 2010 their report was submitted by SITLA to the Utah Department of Community and Culture State Historic Preservation Office (SHPO) as per the SHPO-SITLA cultural resources consultation Programmatic Agreement (SHPO Case No. 11-0075). The Deputy State Historic Preservation Officer, concurred with the determination of no historic properties affected, in an email to DOE dated June 8, 2011.

Because of the location of the proposed Pilot Plant site within approximately 0.25 mile of the Jackson Flat Water Supply Storage Project, and because Native American remains were inadvertently discovered during the construction for that project, the Kaibab Band of Paiute Indians have expressed serious concerns about the siting of the proposed Pilot Plant. The Kaibab Band anticipates that the project may inadvertently uncover Native American remains during construction, and they expressed their concerns in a letter to DOE dated June 13, 2011 (Appendix A). That letter also outlines the Kaibab Band's particular interests for the resources and issues to be evaluated by DOE for this project, which have been addressed to the extent practicable in this EA.

3.4.2 Environmental Consequences of the Proposed Project

Examination of the proposed project area resulted in the discovery and documentation of two cultural resources, both of which have been determined by the SHPO to be not eligible for inclusion on the NRHP. Because of the SHPO concurrence with the determination of no historic properties affected, no further action is required at these sites. In a letter dated June 6, 2011 the Director of the Hopi Cultural Preservation Office, on behalf of the Hopi Tribe, agreed that the proposed project is unlikely to affect cultural resources significant to the Hopi Tribe. In a letter dated July 5, 2011 the Supervisory Anthropologist, on behalf of the Navajo Nation historic Preservation Department-Traditional Culture Program, concluded that the proposed project will not impact Navajo traditional cultural resources (see Appendix A for these correspondences).

DOE initiated formal government-to-government consultation with the Kaibab Band with participation in the Tribal Council meeting on July 21, 2011. DOE also followed up with a letter to the Kaibab Band dated August 1, 2011 (see Appendix A). It is unlikely but possible that unanticipated discoveries may be made during construction. For example, the construction for the Kane County Public Safety Facility, which is also approximately 0.5 mile from the proposed Pilot Plant site and situated along the same topographic feature at approximately the same distance from the Jackson Flat Water Supply Storage Project, has not uncovered any human remains or artifacts. Unanticipated discoveries include archaeological materials, both prehistoric and historic, and human remains. In the event that an unanticipated discovery is made, all construction activity in the immediate vicinity of the discovery would cease and a buffer zone of 100 feet would be established; this is large enough to protect the discovery itself as well as any associated artifacts or features, and to provide an adequate area for a safe investigation of the discovery. Human remains discovered on state lands would be treated under the provisions of applicable state laws (State of Utah Code Annotated 9-9-401 et seq., 7-9-704, 9-9-305, 9-8-176). The DOE would be notified immediately, along with the relevant county coroner or sheriff, SITLA, SHPO and tribes, in a timely manner. The age, affiliation, and circumstances of the burial (or other discovery) would be assessed. Human remains discovered on state lands in Utah can be excavated only pursuant to a separate permit and after consultation with the Native American Remains Committee and the affiliated tribe.

The DOE would develop an emergency discovery plan, as well as a plan for the treatment of human remains, should such be found during construction. Both plans would be in place prior to construction start-up. Since the proposed project would not affect any properties potentially eligible for listing on the NRHP, the SHPO will not require an onsite archaeological monitor. Therefore, DOE would ensure that an onsite or construction supervisor would monitor the excavation process.

At the request of the Kaibab Paiute Tribal Chairman, DOE would require Viresco to allow a single tribal representative from the Kaibab Band of the Paiute Indians, and any other Indian Nation that requests involvement in the project, to be onsite to monitor land clearing and excavation. Each monitor must report to the site superintendent prior to entering the construction work area. Monitors must comply with all local, state and federal health and safety rules and regulations and obtain any required safety training before monitoring can commence. Upon any discovery, DOE would be contacted immediately and a buffer zone would be created around the discovery site. DOE would then contact the interested tribes (Kaibab, Hopi and Navajo), the County coroner, the County sheriff's office, the Utah SHPO, and SITLA, the landowner. DOE would insure that a contract with a qualified archeological consultant would be in place in advance that could be tasked to respond in the event of a discovery. The consultant would be local and available to be onsite in a matter of 24 to 72 hours to ensure that appropriate actions are taken to protect the resource, and undertake appropriate notifications and coordination. All discovered human remains would be treated with respect and dignity. The consultant would provide DOE with a report noting the type and significance of the discovery. DOE would then consult with the tribes on how the remains are handled.

3.4.3 Environmental Consequences of the No Action Alternative

Under this alternative, the site would not be developed as the Utah Coal and Biomass Fueled Pilot Plant. There would be no impacts to existing historic or cultural resources under this alternative.

3.5 Air Quality and Climate

3.5.1 Existing Conditions

3.5.1.1 National Ambient Air Quality Standards and Existing Air Quality

The United States Environmental Protection Agency (USEPA) Region 8 and the UDEQ regulate air quality in Utah. The CAA (42 USC 7401-7671q) gives USEPA the responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50) that set acceptable concentration levels for seven criteria pollutants: particulate matter less than 10 microns in aerodynamic diameter (PM₁₀), particulate matter less than 2.5 microns in aerodynamic diameter (PM_{2.5}), sulfur dioxide (SO₂), carbon monoxide (CO), *oxides of nitrogen* (NO_x), ozone (O₃), and lead. Short-term standards (1-, 8-, and 24-hour periods) have been established for pollutants that contribute to acute health effects, while long-term standards (annual averages) have been established for pollutants that contribute to chronic health effects. Each state has the authority to adopt standards stricter than those established under the federal program; however, Utah accepts the federal standards (Table 3.5-1).

Federal regulations designate Air Quality Control Regions (AQCRs) that are in violation of the NAAQS as nonattainment areas, and those in accordance with the NAAQS as attainment areas. Kane County (and therefore the proposed biomass facility) is in the Four Corners Interstate AQCR 014 (40 CFR 81.121). USEPA has designated Kane County as in attainment for all criteria pollutants (USEPA, 2011b). Because the project is in an attainment area, the air conformity regulations do not apply. Nevertheless, because of the concerns raised by many during the public scoping process about emissions, DOE gave full consideration to the project emissions and the applicability thresholds under the general conformity rules to determine the level of impact under NEPA.

Worst-case ambient air quality conditions can be estimated from measurements conducted at air-quality monitoring stations (Table 3.5-1). Notably, because of the relatively rural area and generally good air quality conditions, levels of CO, NO₂, SO₂, and PM₁₀ are not monitored in Kane, or neighboring Washington and San Juan counties.

Table 3.5-1. Air Quality Standards and Ambient Air Concentrations near Kane County

Pollutant	2006		2007		2008		Federal Standards	
	Washington	San Juan	Washington	San Juan	Washington	San Juan	Primary ¹	Secondary ²
Ozone (parts per million - ppm)								
8-hour highest³	0.076	0.073	0.077	0.074	0.076	0.075	0.075	Same as Primary Standard
8-hour 2nd highest	0.075	0.071	0.077	0.074	0.074	0.073	-	-

Source: USEPA, 2011a

¹ National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

² National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of pollutant.

³ Not to be exceeded by the 3-year average of the annual 4th highest daily maximum 8-hour average.

⁴ The Washington Monitor is Site Number 490530130 and the San Juan County Monitor is Site Number 490370101.

Class 1 federal lands include areas such as national parks, national wilderness areas, and national monuments. These areas are granted special air quality protections under Section 162(a) of the CAA. Federal regulations require the operator of any new major stationary source located within 62 miles of a Class I area to contact the Federal Land Managers for that area (40 CFR 51.307). Table 3.5-2 outlines the Class I areas in Utah and Arizona and their approximate distance from the proposed facility.

Table 3.5-2. Class 1 Areas near Kanab, Utah

Area Name	Acreage	Approximate Miles From Proposed Project	Federal Land Manager
Arches National Park	65,098	200	National Park Service
Bryce Canyon National Park	35,832	45	National Park Service
Canyonlands National Park	337,570	165	National Park Service
Capitol Reef National Park	221,896	110	National Park Service
Zion National Park	142,462	30	National Park Service
Grand Canyon National Park	1,176,913	45	National Park Service
Sycamore Canyon Wilderness	47,757	135	US Forest Service

Source: USEPA, 2011c

3.5.1.2 Climate

The proposed facility is *within the Kanab city limits in* Kane County, Utah with little *residential* development nearby *other than* farms and scattered homes *within a mile of the site*. Surface elevations in the area range from about 4,900 to 5,040 feet above mean sea level, and topography in the area consists of gently rolling hills and valleys with scattered lakes. Kanab, Utah, the largest city in Kane County, has an average high and low temperature in the coldest month, January, of 47.3 °Fahrenheit (°F), (8.5°Celsius (°C)) and 21.9°F (-5.6°C), respectively, and an average high and low temperature in the warmest month, July, of 90.8°F (32.6°C) and 56.8 °F (13.7°C), respectively. Kanab also has an average annual precipitation of 14.9 inches per year. The wettest month of the year is March with an average rainfall of 1.9 inches (Idcide, 2011).

A wind rose for Kanab or Kane County was not available from the National Oceanic and Atmospheric Administration (NOAA), the Natural Resources Conservation Service (NRCS), or the Federal Aviation Administration (FAA). Wind roses were obtained from the NRCS for the Cedar City Airport, located approximately 55 miles northwest of Kanab, based on data collected in 1961 (NRCS, 2002). The wind roses indicate that the prevailing wind direction is from the southwest with secondary wind direction from the north, and tertiary direction from the southeast. In the spring and summer months, winds diminish from the north and increase from the southeast, but southwesterly winds prevail in all seasons. Based on the runway orientation at the Kanab Municipal Airport from southwest to northeast, the prevailing wind directions are believed to be comparable to those in Cedar City.

GHG's are components of the atmosphere that trap heat relatively near the surface of the earth and, therefore, contribute to the greenhouse effect and global climate change. Most GHGs occur naturally in the atmosphere, but increases in their concentration result from human activities such as the burning of fossil fuels. Global temperatures are expected to continue to rise as human activities continue to add carbon dioxide, methane, nitrous oxide, and other greenhouse (or heat-trapping) gases to the atmosphere. Human health, agriculture, natural ecosystems, coastal areas, and heating and cooling requirements are examples of climate-sensitive systems. Some observed changes include shrinking of glaciers, thawing of permafrost, later freezing and earlier break-up of ice on rivers and lakes, lengthening of growing seasons, shifts in plant and animal ranges and earlier flowering of trees (USEPA, 2007; IPCC, 2007).

Federal agencies, states, and local communities address global climate change by preparing GHG inventories and adopting policies that would result in a decrease of GHG emissions. The President's CEQ recently released draft guidance on when and how federal agencies should consider GHG emissions and climate change in NEPA. The draft guidance includes a presumptive effects threshold of 25,000 metric tons per year (*tpy*) of carbon dioxide equivalent emissions from an action (CEQ, 2010).

3.5.2 Environmental Consequences of the Proposed Project

Short- and long-term minor adverse effects on air quality would be expected from the proposed project. The effects would be from air emissions during construction, and from the operation of the proposed coal/biomass fueled Pilot Plant. Increases in emissions would be *de minimis* (of minimal importance) and would not contribute

to a violation of any federal, state, or local air regulation. New stationary sources of air emissions associated with the project would not exceed the major source threshold and would not be large enough and/or close enough potentially to affect a Class I area.

Notably, no coal or biomass would be directly combusted at the proposed facility. All operations would be on a testing scale, and full-scale production or storage of any fuels or materials would not be conducted at the site. The total amount of emissions from the facility would be very small, and *not appreciably affect air quality*.

To determine the feasibility of the hydrogasification process, small amounts of syngas would be produced. Syngas is comprised of “clean” fuels such as hydrogen and methane (CH₄), and other common inert materials such as nitrogen, oxygen, carbon dioxide, and water. Engineering controls in the form of a flare exhaust would be installed to eliminate any syngas emissions from the hydrogasification process. Table 3.5-3 contains a breakdown of the different components of syngas and the emissions from the flare exhaust after it is combusted. Notably, emissions would be made up almost entirely of typical combustion gas components (nitrogen, oxygen, carbon dioxide, and water vapor) with small amounts of, criteria pollutants (i.e. non-hazardous) and a minute amount of uncombusted hydrogen. With regard to hazardous air pollutants (HAPs), high molecular weight organic compounds or toxic metals would not be expected in quantities that would pose a health hazard, based on the combustion efficiency of the flare and the small concentrations of metals in the feedstock to the gasifiers.

Table 3.5-3. Components of Syngas and Breakdown of Emissions from the Pilot Plant

Constituent	Mole Fraction [%]	
	Syngas	Flare Exhaust
Nitrogen (N ₂)	1.13	<u>59.37</u>
Oxygen (O ₂)	-	2.51
Hydrogen (H ₂)	<u>44.72</u>	0.01
Water (H ₂ O)	<u>32.67</u>	30.75
Hydrogen sulfide (H ₂ S)	<u>0.05</u>	-
Carbon monoxide (CO)	8.05	0.01
Carbon dioxide (CO ₂)	7.46	<u>7.29</u>
Methane (CH ₄)	5.83	-
Ammonia (NH ₃)	<u>0.08</u>	-
Carbon oxide sulphide (COS)	<0.01	-
Sulfur Dioxide (SO ₂)	-	0.02
Nitrogen oxide (NO or NO _x)	-	<u>0.04</u>
Total	100	100

3.5.2.1 Estimated Emissions and General Conformity

The general conformity rules require federal agencies to determine whether their action(s) would increase emissions of criteria pollutants above preset threshold levels (40 CFR 93.153(b)). These *de minimis* (of minimal importance) rates vary depending on the severity of the nonattainment and geographic location. Because the region is in attainment, the air conformity regulations do not apply. However, all direct and indirect emissions of criteria pollutants for the proposed project have been estimated and compared to *de minimis* threshold levels of 100 tpy to determine the proposed project’s impact under NEPA. Operations for both the proposed action (30 days per year) and the connected action (130 days per year) were included for comparison purposes. Under the proposed action all three stationary sources of air emissions (i.e. the regenerator, boiler, and flare) were used to estimate emissions. Under the connected action all four stationary sources of air emissions (i.e., the regenerator, boiler, steam propane reformer, and flare) were used to estimate emissions. As stated in Table 2.8-1 a steam propane reformer would be installed at the proposed Pilot Plant under the connected action to produce hydrogen

as opposed to continued use of hydrogen produced off site and transported by truck to the Pilot Plant. The total direct and indirect emissions associated with constructing the proposed facilities, and operating new stationary sources of air emissions, would be *de minimis* (Table 3.5-4). Emissions below these levels are presumed to conform with the States implementation Plan of the Clean Air Act, and would have negligible effect on air quality. A detailed breakdown of construction and operational emissions is included in Appendix D.

Table 3.5-4. Proposed Project Emissions Compared to Applicability Thresholds

Activity	Emissions (tpy)						De minimis threshold (tpy)	Would emissions exceed applicability thresholds? [Yes/No]
	CO	NO _x	VOC	SO _x	PM ₁₀	PM _{2.5}		
Construction	4.0	5.5	0.8	<0.1	0.3	0.3	100	No
Operational (30 days per year)	3.2	1.8	<0.4	1.2	<0.1	<0.1		
Operational (130 days per year)	13.8	7.8	<1.7	5.2	<0.1	<0.1		

For the purposes of calculating emissions, it was assumed that nine personnel would be employed at the proposed facility, and the plant would operate 30 days during the period of the cooperative agreement with DOE and up to 130 days thereafter. Moderate changes in the size or type of equipment ultimately selected and the number of personnel would not substantially change the total direct or indirect emissions or the level of impact under NEPA. Notably, negligible amounts of airborne releases of coal ash may be released. Fugitive particle emissions from the potential preprocessing (i.e. pulverization) of coal on site is included in estimates for 130 days of operation. Any amount released is expected to be far below levels that could adversely impact air quality.

3.5.2.2 Regulatory Review

Stationary sources of air emissions associated with a proposed project may be subject to federal and state air permitting regulations. These requirements include, but are not limited to, minor new source review (NSR), prevention of significant deterioration (PSD), and new source performance standards (NSPS) for selected categories of industrial sources. The proposed facility would have emissions so low that they would be exempt from the air permitting requirements R307-401-5 through 8, Permit Notice of Intent thru Approval Order; hence, no Permit to operate it would be required. The facility would fall under the small source exemption (R307-401-9), which allows very small sources of air pollution greater flexibility to make changes in their emissions as long as they remain eligible for the exemption. Under this exemption, the facility would:

1. Emit less than 5 tpy of PM₁₀, SO₂, CO, NO_x, and volatile organic compounds (VOC);
2. Emit less than 500 pounds per year of any HAP, and less than 2,000 pounds per year for any combination of HAPs; and
3. Emit less than 500 pounds per year of any air contaminant not listed in (1) or (2) above and less than 2,000 pounds per year of any combination of air contaminants not listed in (1) or (2) above.

Viresco submitted a Small Source Exemption Registration, which was reviewed and approved by UDEQ, DAQ (UDEQ, 2010). A copy of the Small Source Exemption Registration and the UDEQ approval letter are in Appendix D2. Under the connected action of possible future operation, the Pilot Plant may operate up to 130 days per year. As the Pilot Plant's total projected emissions under this scenario are to exceed the levels outlined in the small source exemption, the facility would need to obtain a minor source operating permit from UDEQ.

Notably, other non-permitting requirements may be required during construction through the use of compliant practices and/or products. The construction and operation of the proposed Pilot Plant would be subject to the requirements of R307-201-3 (Visible Emission Standards), R307-202 (Emission standards General Burning), and R307-205 (Emission Standards: Fugitive Emissions and Fugitive Dust).

In addition to those outlined above, no person shall handle, transport, or store any material in a manner which may allow unnecessary amounts of air contaminants to become airborne. During construction reasonable measures may be required to prevent unnecessary amounts of particulate matter from becoming airborne

(Subsection 102-14). This listing is not all-inclusive; Viresco and all contractors would comply with all applicable air pollution control regulations. Outside of these BMPs, no mitigation measures would be required for the construction and operation of the proposed facility.

3.5.2.3 Air Dispersion Modeling

Under R307-410-4, Modeling of Criteria Pollutant Impacts in Attainment Areas, a new source with total emissions greater than amounts specified in Table 3.5-5 is required to conduct air quality modeling to ensure that ground level concentrations would not violate the NAAQS. As shown in Table 3.5-5, the proposed facility's emissions would be well below the thresholds requiring modeling. It is understood that at these levels ground level concentrations would not exceed the NAAQS.

Table 3.5-5. Operational Emissions Compared to Thresholds Requiring Air Modeling in Utah

<u>Criteria Pollutant</u>	<u>Operational Emissions (130 Days per Year) (tpy)</u>	<u>Threshold Requiring Modeling (tpy)</u>	<u>Modeling Required?</u>
<u>Sulfur dioxide (SO₂)</u>	<u>5.2</u>	<u>40</u>	<u>No</u>
<u>Oxides of Nitrogen (NO_x)</u>	<u>7.8</u>	<u>40</u>	<u>No</u>
<u>PM₁₀ (fugitive emissions)</u>	<u><0.1</u>	<u>5</u>	<u>No</u>
<u>PM₁₀ (non-fugitive emissions)</u>	<u><0.1</u>	<u>15</u>	<u>No</u>
<u>Carbon monoxide (CO)</u>	<u>13.8</u>	<u>100</u>	<u>No</u>
<u>Lead (Pb)</u>	<u><0.1</u>	<u>0.6</u>	<u>No</u>

Although not required under UDEQ regulations, initial dispersion modeling was performed. The maximum predicted 1-hour concentrations were compared to the NAAQS to determine the level of effects (Table 3.5-6). Distance of maximum concentration for all criteria pollutants was between 1,000 and 1,400 feet (300 and 425 meters). Predicted concentrations are well below the NAAQS for all criteria pollutants. The facility neither would introduce localized hot spots of air pollutants, nor jeopardize the attainment status of the region. In addition, because the emissions would be very small and concentrations would not exceed the NAAQS, it is anticipated that there would be negligible to minor impact to the nearby reservoir, wildlife, or recreation areas. Detailed modeling inputs and results are outlined in Appendix D.

Table 3.5-6. Dispersion Modeling Results

<u>Pollutant</u>	<u>Maximum 1-Hour Concentration</u>			<u>NAAQS</u>	<u>Averaging Time</u>	<u>Exceeded NAAQS?</u>
	<u>[µg/m³]</u>	<u>[ppm]</u>	<u>[ppb]</u>			
<u>Nitrogen dioxide (NO₂)</u>	<u>11.01</u>	<u>0.0059</u>	<u>5.9</u>	<u>53 ppb</u>	<u>Annual</u>	<u>No</u>
				<u>100 ppb</u>	<u>1-Hour</u>	
<u>Sulfur dioxide (SO₂)</u>	<u>7.6</u>	<u>0.0029</u>	<u>2.9</u>	<u>0.03 ppm</u>	<u>Annual</u>	<u>No</u>
				<u>0.14 ppm</u>	<u>24-Hour</u>	
				<u>75 ppb</u>	<u>1-Hour</u>	
<u>Carbon monoxide (CO)</u>	<u>12.9</u>	<u>0.0113</u>	<u>11.3</u>	<u>9 ppm</u>	<u>8-Hour</u>	<u>No</u>
				<u>35 ppm</u>	<u>1-Hour</u>	
<u>Particulate matter (PM₁₀)</u>	<u>0.1082</u>	<u>-</u>	<u>-</u>	<u>150 µg/m³</u>	<u>24-Hour</u>	<u>No</u>
<u>Particulate matter (PM_{2.5})</u>	<u>0.01082</u>	<u>-</u>	<u>-</u>	<u>15 µg/m³</u>	<u>Annual</u>	<u>No</u>
				<u>35 µg/m³</u>	<u>24-Hour</u>	

DOE has determined that no additional air quality studies are necessary to take the required hard look under NEPA. Notably, the Utah Division of Air Quality (UDAQ) concurs with the evaluation in the EA that the Pilot Plant will be an insignificant source of air emissions, and that it meets the requirements for a Small Source

Exemption under Utah Administrative Code (UAC) R307-401-9. A copy of the concurrence letter has been added to Appendix D.

3.5.2.4 Odors

No odors from the facility are expected. The gasification process is totally contained in pressurized vessels and an enclosed flare would be used. There is the potential of a leak that could release odors, but all vessels would be designed to American Society of Mechanical Engineers (ASME) standards and the potential would be minimal. Viresco would comply fully with the Kanab City ordinance specifying that “No emission of odorous gases or other matter shall be permitted in such quantities as to be readily detectable when diluted in the ratio of one (1) volume of odorous air to four (4) of clean air at the point of greatest concentration”. The flare stack design would be certified and submitted by a Professional Process Engineer. The flare enclosure design would include an ignition mechanism to ensure that gases are combusted efficiently and not allowed to dissipate to the atmosphere.

3.5.2.5 Greenhouse Gases and Global Climate Change

The CEQ recently released draft guidance on when and how federal agencies should consider GHG emissions and climate change in NEPA documents. The draft guidance includes a presumptive effects threshold of 25,000 metric tons *per year* of carbon dioxide equivalent emissions from an action (CEQ, 2010). Thus, if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of CO₂-equivalent GHG emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public.

The proposed project would produce a very minor increase in GHG emissions to the atmosphere. The proposed Pilot Plant would generate approximately 543 tpy (*493 metric tpy*) of CO₂ *in 30 days of operations*. This is equivalent to annual GHG emissions from 96 passenger vehicles, or the electricity use of 60 homes for one year (USEPA, 2011a). For the connected action, the direct CO₂-equivalent GHG emissions would be approximately 2,588 tons (2,353 metric tons) based on 130 days of operation. The GHG emissions would be well below the CEQ presumptive effects threshold for impacts from this project. Even if the proposed Pilot Plant could operate 365 days per year, the maximum potential emission of 6,600 metric tons of CO₂-equivalent GHG per year would be only about 26 percent of the threshold. On this basis, DOE does not believe additional analysis for GHG emissions is warranted. Cumulative impacts of GHG emissions and climate change are addressed in Section 4.2.6.

3.5.3 Environmental Consequences of the No Action Alternative

Selecting the no action alternative would result in no impact to ambient air-quality. No construction would be undertaken, and no new facility operations would take place. Ambient air-quality conditions would remain as described in Sections 3.5.1.

No-action, meaning that this proposed project is not carried out in any setting, would delay planned steam hydrogasification projects by perhaps several years. The increased understanding of feedstock conversion to clean, high-energy fuel sources would not be gained, nor could an example of successful and safe steam hydrogasification, on any scale, be offered to the public in support of a larger, more expensive project. The complexities of a larger pilot might translate to long delays in public and regulatory approval, thereby jeopardizing the overall project goals of developing clean domestic fuels from coal and biomass.

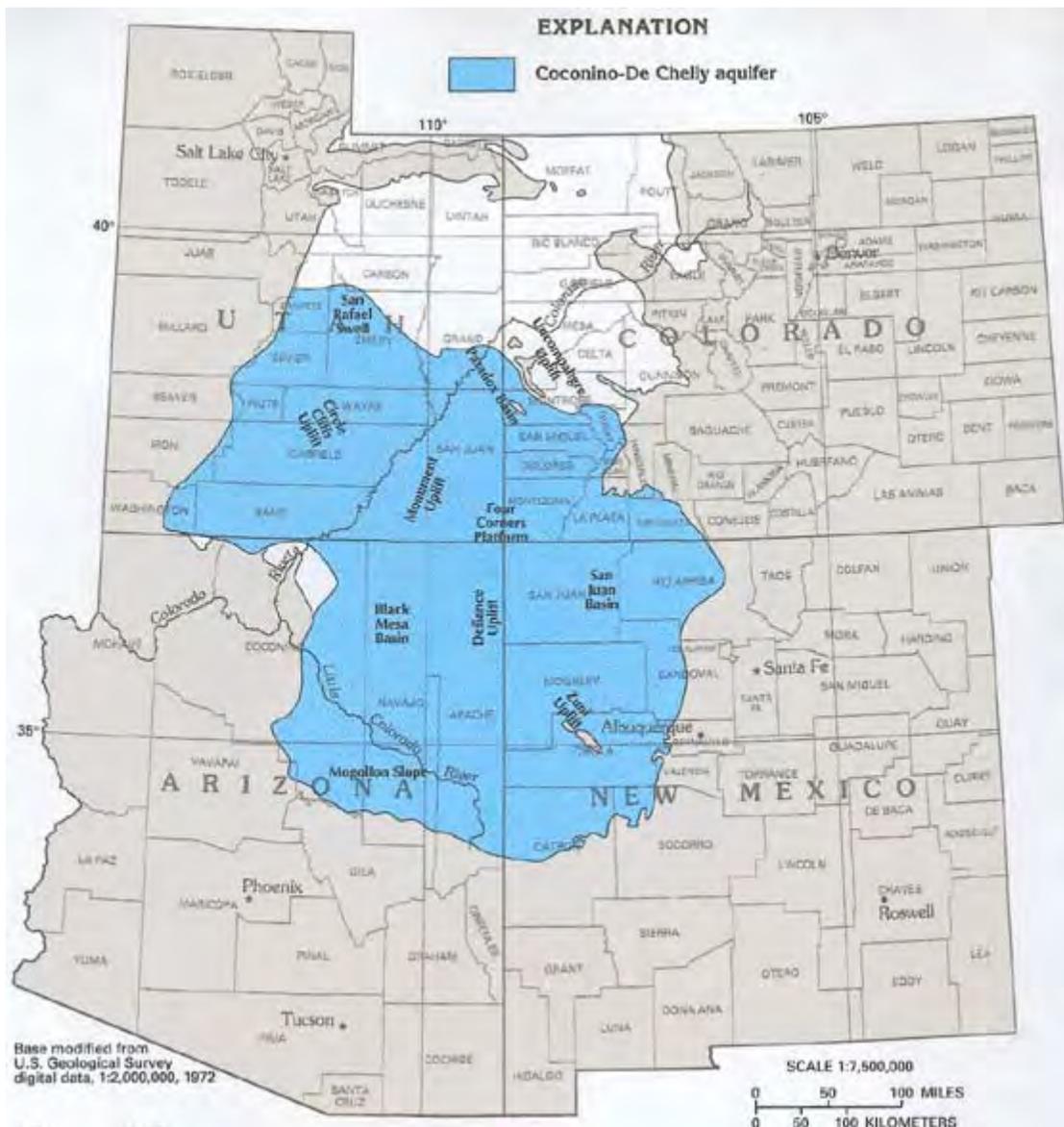
3.6 Groundwater

3.6.1 Existing Conditions

During the scoping process, members of the public expressed concerns about the potential for contamination of groundwater sources by the proposed Pilot Plant. The City of Kanab overlies a consolidated rock aquifer system known as the Colorado Plateaus aquifers. The Colorado Plateaus aquifers underlie an area of approximately 110,000 square miles in western Colorado, northwestern New Mexico, northeastern Arizona, and eastern Utah. This area is approximately coincident with the Colorado Plateaus Physiographic Province. The Colorado Plateaus aquifers are contained in a thick sequence of poorly to well-consolidated conglomerate, sandstone, siltstone, and shale. Volcanic rocks, carbonate rocks, and evaporate deposits in the area also can yield water to wells.

Structural deformation, faulting, and lateral changes in the lithology of the rocks have produced a complex sequence of water-yielding layers (USGS, 1995 and USGS, 1995a).

The many water-yielding units in the Colorado Plateaus aquifers are narrowed and grouped into four principal aquifers known as the Uinta-Animas aquifer, the Mesaverde aquifer, the Dakota-Glen Canyon aquifer system, and the Coconino-De Chelly aquifer. The City of Kanab is located above the Coconino-De Chelly aquifer (Figure 3-11). The formations that comprise the Coconino-De Chelly aquifer are the Coconino, De Chelly, and Glorieta Sandstones; the San Andres Limestone; and the Yeso and Cutler Formations. In the areas where the altitude of the potentiometric surface of the Coconino-De Chelly aquifer has been mapped, ground water generally flows from the structural uplifts toward the major surface-water drainages. The aquifer is recharged in the Uncompahgre Uplift, Paradox Basin, San Rafael Swell, Circle Cliffs Uplift, Defiance Uplift, Zuni Uplift, and Mogollon Slope. Discharge mainly is to the Colorado and Green Rivers (USGS, 1995a).



Source: USGS, 1995a

Figure 3-11. Distribution of the Coconino-De Chelly Aquifer

Groundwater can be classified according to concentration of total dissolved solids (TDS):

- Freshwater: < 1,000 milligrams per liter (mg/L) TDS.
- Brackish water: 1,000 to 10,000 mg/L TDS.
- Saline water: 10,000 to 100,000 mg/L TDS.
- Brine water: >100,000 mg/L TDS.

The total dissolved solids concentration in water from the Coconino-De Chelly aquifer in Utah, ranges from less than 1,000 mg/L to 10,000 mg/L (USGS, 1995a). Water containing less than 10,000 mg/L TDS is considered a drinking water source and is protected and regulated by the UDEQ, Division of Water Quality. Utah is also governed by the prior appropriation doctrine and the fact that all water is a public resource. The state engineer and the Division of Water Rights are responsible for administering groundwater rights in the state (BLM, 2001).

The City of Kanab withdraws approximately 2.5 to 3 million gallons a day from 16 wells in the Lamb Point Tongue of the Navajo and Navajo Aquifers, drilled down 300 to 700 feet below ground surface. The City of Kanab does not have a water treatment plant. The water is withdrawn from the wells, slightly chlorinated and then distributed to the public (Robinson, K., 2011). During a geotechnical soils analysis at the proposed project site conducted in December of 2010, no subsurface water was observed in any of the test trenches and based on information within the area the closest water table is in excess of 100 feet (TC Engineering, PC, 2010).

3.6.2 Environmental Consequences of the Proposed Project

There would be no direct impacts to aquifers from construction of the project, as it is not expected that any drilling or extensive excavating would be required at this site. During construction, there would be a *short-term* minor potential for groundwater contamination to occur from the operation and maintenance of construction vehicles and equipment (e.g., accidental fuel spills). The potential for contamination to occur would be minimized through the implementation of the facility's SWPPP and SPCC Plan. Any potential impacts associated with the leaking of substances (i.e., fuels, oils, and other lubricants) into soils and entering groundwater aquifers would be avoided through the use of BMPs to prevent spills or leaks. The chance of spills reaching the groundwater is unlikely as groundwater is over 100 feet below the surface; however, the use of BMPs would be implemented regardless as a precaution.

Operation of the proposed plant would increase the City of Kanab's current water needs by 3,540 gpd for 30 days of operation and up to 4,380 gpd for 130 days of operation, which would be accommodated through the existing 16 wells. This represents 0.07 percent of the existing wells capacity for 30 days of operation, 0.08 percent for the 130 days of operation, and 0.13 percent and 0.16 percent of the Kanab daily use, respectively. Therefore, minor impacts to groundwater are expected to result from operation of the Pilot Plant. No specific information on the fluctuation of groundwater levels in the immediate vicinity of the project site is available; however, groundwater aquifers in the area are generally an abundant resource; therefore, *long-term* but minor impacts on groundwater levels would be expected. During operations, accidental spills of toxic substances, such as petroleum products, could be a potential source of groundwater contamination. As stated above, the potential for contamination to occur would be minimized through the implementation of the facility's SWPPP and SPCC Plan; therefore, a minor potential for groundwater contamination to occur would be expected.

Under the connected action, future operations up to 130 days per year may include the installation of an evaporation pond which would hold process wastewater. A groundwater discharge permit may be required by the state for the protection of groundwater quality from the evaporation pond (per Utah Administrative Code R317-6). The pond would be designed based on the analysis of the wastewater from tests and the corresponding regulatory requirements. Typically these types of ponds are lined with a single layer of High Density Polyethylene (HDPE) over a compacted clay basin (Raju, A., 2011). HDPE is designed to be resistant to damage from UV and exposure to the elements and facilitate quick evaporation. HDPE liners combine high tensile strength and chemical resistance with excellent stress-crack resistance and low temperature properties for highly reliable containment. Chemically inert and resistant to most hydrocarbons, these liners are the industry standard for a wide range of applications such as landfill caps/closures, lagoon liners, and mining applications. Therefore, no impacts to groundwater resources would be expected.

Operation of the proposed plant under the connected action would increase the City of Kanab's current water needs by 4,380 gpd for 130 days of operation, which would be accommodated through the existing 16 wells. This represents 0.08 percent of the existing wells capacity and therefore would have a *long-term* but minor impact to groundwater. As the Pilot Plant would operate longer, the chance of accidental spills increases however as stated under the proposed project potential for contamination to occur would be minimized through the implementation of the facility's SWPPP and SPCC Plan; therefore, a minor potential for groundwater contamination to occur would be expected.

3.6.3 Environmental Consequences of the No Action Alternative

Under the no action alternative, construction and operation of the Pilot Plant would not occur at the site and impacts to groundwater would not occur as no additional withdrawal would be expected.

3.7 Materials and Waste

3.7.1 Existing Conditions

The primary process-related materials that would be utilized by the Pilot Plant include the feedstocks: coal and lignocellulosic biomass. Utah sub-bituminous or lignite coal would be utilized. In 2009, there were eight coal producing mines in Utah, which produced 21,718,000 tons. The average coal cost in the state was \$32.32 per ton (EIA, 2009). Utah typically accounts for more than two percent of U.S. coal production. More than two-thirds of Utah's coal production is consumed for electricity generation within the state; the remainder is shipped by rail primarily to Nevada and California (EIA, 2011). Lignocellulosic biomass can come from a variety of sources including: agricultural residues (including corn stover and sugarcane bagasse), dedicated energy crops, wood residues (including sawmill and paper mill discards), and municipal paper waste. *The biomass feedstock would likely be woody waste provided to the Pilot Plant by a supplier located in southern Utah.*

Sand would be used in the process. In 2008 there were more than 48 active construction sand and gravel production operations in Utah ranking the state fifth in the Nation in terms of tonnage (41,226,000 tons) (USGS, 2010; USGS, 2010a). The process chemicals that would be required for the Pilot Plant consist of common water treatment and conditioning chemicals that are widely used in industry with broad regional and National availability. Large National suppliers of water and waste treatment chemicals include Ciba, Kemira, Nalco, and the SNF Group, among others. Propane would be used as fuel in the process, which would be supplied by Garkane Energy.

Wastes can generally be divided into three broad categories, including hazardous, nonhazardous, and universal wastes. A hazardous waste is a waste with properties that make it dangerous or potentially harmful to human health and/or the environment. Hazardous wastes are federally regulated under Subtitle C of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6901, et seq. Nonhazardous wastes are all wastes not classified as hazardous, which is typically thought of as residential or municipal waste. Universal wastes are certain hazardous wastes, e.g. batteries, which, when managed or recycled properly, are not included as hazardous waste.

Table 3.7-1 provides information on the solid waste landfills within approximately 60 miles of the project site, including 2009 waste receipt rates and available information regarding remaining capacities. It is important to note that the Kane County Landfill was permitted in May 2011 and is approximately one mile to the east of the project site. There are six commercial hazardous waste Treatment, Storage, and Disposal facilities in Utah: Ashland Chemical, Inc.; Chemical Demil; Clean Harbors Aragonite, LLC; Clean Harbors Clive, LLC; Clean Harbors Grassy Mountain, LLC; Deseret Chemical Depot (DCD); EnergySolutions, LLC; and Safety-Kleen – Pioneer Road (UDEQ, 2011).

Table 3.7-1. Municipal Solid Waste Landfills Within Approximately 60 Miles of the Project Site

Landfill	County	2009 Municipal Solid Waste Receipt (tons)	2009 C&D Debris Waste Receipt (tons)	Remaining Capacity (tons)	Remaining Capacity (years)
Western Kane County Special Service District/Kanab MSW Landfill ¹	Kane	5,000	0	NA	20
<u>Western Kane County Special Service District/Long Valley MSW Landfill¹</u>	<u>Kane</u>	<u>4,000</u>	<u>0</u>	<u>119,000</u>	<u>10</u>
Garfield Co/Johns Valley MSW Landfill ¹	Garfield	6,350	720	NA	NA
Garfield Co/Ticaboo MSW Landfill ¹	Garfield	2,800	0	NA	NA
Panguitch C/D Landfill	Garfield	0	325	300	0
Iron County MSW Landfill ¹	Iron	34,537	8,195	1,829,560	38
Iron Co/Parowan C/D Landfill ¹	Iron	0	1,655	94,000	24
Cedar City/Bulloch Pit C/D Landfill	Iron	0	7,405	NA	NA
Washington County MSW Landfill ¹	Washington	143,619	11,305	322,000	NA

Source: UDEQ, 2011a and UDEQ, 2010a

¹ Each of these landfills accepts special waste as defined in UAC R315-301, including ash.

NA = Not Available; C&D = Construction and Demolition

3.7.2 Environmental Consequences of the Proposed Project

Pilot Plant construction materials would consist primarily of structural steel beams and steel piping, tanks, and valves. Locally obtained materials would include crushed stone, sand, and lumber for the proposed facilities. Components of the facilities would also include concrete, ductwork, insulation, electrical cable, lighting fixtures, and transformers.

During construction minor amounts of typical construction refuse and debris would be generated and would need to be disposed of properly. Since no buildings or other structures currently exist at the site, no demolition would be necessary. The amount of municipal solid waste and construction debris generated during construction is anticipated to be minor and would not significantly affect the capacity of nearby disposal facilities (see Table 3.7-1 for details on nearby disposal facilities).

During construction, small amounts of potentially hazardous waste materials (e.g., waste oils, solvents, and paints) would be generated. Hazardous waste generated during construction would be properly managed and stored on site in accordance with RCRA regulations. Preventative measures, such as providing fencing around the construction site, establishing contained storage areas, responding immediately to spills, and controlling the flow of construction equipment and personnel would help reduce the potential for a release of hazardous materials to occur. The quantity and type of hazardous waste that would be generated during construction would be limited to typical construction-related waste streams commonly accepted by licensed Treatment, Storage, and Disposal facilities for hazardous waste, and commercially-available treatment or disposal would be available. Thus, impacts from hazardous waste disposal are expected to be *short-term* and minor.

Table 3.7-2 describes the materials that would be used in Pilot Plant processes and anticipated wastes. During operations, ample supplies of feedstocks and process materials would be available in the area. Coal use would

represent a very small amount as compared to the production rate in Utah. Estimated amounts of lignocellulosic biomass to be used are not currently available; however, considering the wide variety of potential sources, it is not anticipated that supplies would be limited. Sand would serve as a substrate and not be consumed in the process. Utah is one of the top sand-producing states in the Nation; thus, sand availability would not be limited. Garkane Energy would supply propane to the site and would be capable of supporting operations. Process chemicals required would consist of common industrial chemicals with wide availability; *including hydrogen and nitrogen* thus, it is not expected that supplies would be limited.

Table 3.7-2. Materials Required for Pilot Plant Operation and Anticipated Wastes

Item	Description
<i>Feedstocks and Process Materials</i>	
Coal	5 tons per day; 150 tons for 30 days of operation; 650 tons for 130 days of operation.
Lignocellulosic Biomass	Agricultural residues (including corn stover and sugarcane bagasse), dedicated energy crops, wood residues (including sawmill and paper mill discards), and municipal paper waste.
Sand	Up to 300 tons for 30 and 130 days of operation.
Propane	660 gpd. 6,000 gallon capacity tank onsite (would be purchased from Garkane Energy).
<i>Hydrogen</i>	<i>52 lbs/hr. 18,000 gallon capacity tank onsite.</i>
<i>Nitrogen</i>	<i>276 lbs/hr for purging and fluidization. 11,000 gallon capacity tank onsite.</i>
<i>Products and Wastes</i>	
Ash and Fines Solid Waste	1,168 pounds of ash per operational day <i>not including fines</i> . Total of 26 tons including <i>ash and fines</i> for 30 days of testing. Total of 113 tpy, including <i>ash and fines</i> , for possible future operations (up to 130 days per year).
Solid Waste	Up to 14.6 tpy.

During operations, based on an estimated solid waste generation rate of 8.93 pounds per employee per day for industrial establishments (CalRecycle, 2011), the Pilot Plant would be expected to produce approximately 80 pounds of solid waste per day. This would amount to 14.6 *tpy* which assumes waste generation for 365 days per year to provide a conservative estimate; however, the Pilot Plant would only be operated for a total of 30 days funded by DOE (or possibly up to 130 days per year for future operations). Thus, it is likely that the overall total would be considerably less assuming that general maintenance during non-operational periods would produce considerably less solid waste than during operations. Ashes and fines waste produced in the process (up to 26 tons for 30 days of testing; up to 113 tons for possible future operations of 130 days) would be considered a special waste as per Utah Administrative Code (UAC) R315-301 “Environmental Quality, Solid and Hazardous Waste – Solid Waste Authority, Definitions, and General Requirements” and federal regulations (EPA, 2010). *Viresco would use appropriate ash and fines handling and storage methods to prevent dust from blowing offsite. These methods typically involve keeping the ash and fines wet or encapsulating the ash with a cover. The ash would be collected, analyzed, and disposed of in a landfill permitted to accept the ash based on the analysis.*

The large amount of disposal capacity in the region is described in Table 3.7-1; even at 128 tons of waste requiring disposal under the connected action for 130 operational days per year [14.6 tpy of solid waste and 113 tpy of ashes and fines]) the Pilot Plant wastes would represent less than a one percent increase in solid waste receipt to regional landfills. Thus, impacts on disposal capacities would be *long-term* but minor.

Releases of hazardous materials to the environment are always a possibility when hazardous materials are in use or are produced at a facility. *In accordance with federal and state regulations*, Viresco would develop appropriate spill response, pollution prevention, and emergency response plans to address the medical and

environmental hazards associated with the Pilot Plant. The plans would include, at a minimum, a SWPPP and an emergency response plan. Spill response training would be provided to employees working with the hazardous materials stored and used onsite. In addition, protective measures, such as providing secondary containment around hazardous material storage areas, would be incorporated into the final design of the Pilot Plant as necessary and appropriate. These measures would be expected to minimize the potential for impacts from spills of hazardous materials. Should a spill happen, it would immediately be reported to the jurisdictional authorities and technically qualified hazardous material (HAZMAT) responders would be hired for the clean-up. These firms would be notified of the Pilot Plant's needs in advance of construction and would be secured under contract to respond in the event of a spill in a timely and professional manner (Viresco Energy, LLC, 2010).

The use of hazardous materials would result in the creation of hazardous wastes (e.g., oily rags), which would require proper disposal or recycling. Although the exact amount of hazardous waste generation is not known at this time, it is expected that the Pilot Plant would qualify as a Conditionally Exempt Small Quantity Generator (CESQG) of hazardous waste as defined by RCRA. A CESQG is defined as a facility that does not generate more than 220 pounds or 27 gallons of hazardous waste per month. As a CESQG, the Pilot Plant would be required to identify all the hazardous waste generated; not accumulate more than 2,200 pounds of hazardous waste at any time; and ensure that hazardous waste is delivered to a person or facility that is authorized to manage it (EPA, 2008). Considering that the Pilot Plant would be expected to generate relatively small amounts of hazardous wastes, no greater than minor impacts to hazardous waste Treatment, Storage, and Disposal facilities would be expected. In addition, the Pilot Plant would generate universal wastes, e.g. fluorescent light bulbs and batteries, which would be transported offsite to a licensed disposal facility.

3.7.3 Environmental Consequences of the No Action Alternative

Under the no action alternative, construction and operations would not occur; therefore, there would be no changes in materials and waste generation and disposal characteristics in the area as compared to the existing condition.

3.8 Utilities

3.8.1 Existing Conditions

Potable water is currently supplied to the City of Kanab through 16 permitted groundwater wells and 6 springs located on BLM land. The 16 wells have a total water capacity of 3,604 gallons per minute, and the springs produce 65 gallons per minute. The City of Kanab also has four storage tanks that are capable of holding 5,000,000 gallons of potable water. Kanab City's drinking water is one of the best in the state. It has been filtered through several hundreds of feet of Navajo Sandstone. The water meets both state and federal drinking water standards and requires nominal treatment before it is made available to the public (City of Kanab, 2011).

Sewage collection and treatment services are provided by the City of Kanab through a sanitary sewer system and sewage lagoon system. The existing wastewater lines flow towards the southeast with the majority of flow converging near the intersection of 700 South and Main Street. The wastewater flow then continues south to wastewater lagoons near the Utah-Arizona border immediately west of the Kanab Airport. There are 4 wastewater lagoons which have a total capacity of 609,280 gpd. However, the City of Kanab currently utilizes only two of the lagoons which have a total capacity of 348,280 gpd. The City of Kanab has chosen as its service standard the criteria set forth in Administrative Rules for Design Requirements for Wastewater Collection, Treatment, and Disposal Systems (R317-3 of the Utah Administrative Code) (City of Kanab, 2006).

The City of Kanab, including the proposed project site, is furnished electricity by Garkane Energy. Garkane Energy has been incorporated since July 1938, with the first lines energized in December 1939. Garkane Energy serves over 12,700 customers spread over 16,000 square miles of southern Utah and northern Arizona (Garkane Energy, 2007 and Garkane Energy, 2009). As of 2009 Garkane Energy had over 2,168 miles of line, many of which traverse public lands (Parks, Monuments, National Forests, and BLM Lands etc.) (Garkane Energy, 2009).

Beginning in 1998, Garkane Energy began offering Propane Gas service. This service is currently employed by the City of Kanab. The propane division was spun off into an independent, wholly-owned subsidiary effective January 1, 2003. Garkane Propane, Inc. has grown to service over 1,900 customers through southern Utah and northern Arizona (Garkane Energy, 2007a).

The City of Kanab is supplied communication services consisting of local and long distance telephone service, cellular communications, Internet access, cable TV, and high-tech business communication solutions by South Central Communications (South Central Communications, 2005). South Central Communications is one of the largest employers and telecommunication companies in rural southern Utah. They were incorporated in 1955 and currently provide service to more than 20,000 customers (South Central Communications, 2005).

Water, sewer, and communications infrastructure were installed along Kaneplex Road (Figure 3-12; *photo taken before the road was paved*), which borders the site to the north, for purposes of serving the Kane County Public Safety Facility currently under construction approximately 0.5 miles east of the proposed Pilot Plant site. As shown in Figure 2-2, water, sewer, and communication lines have been installed and are proposed to be utilized for the Pilot Plant. Electricity lines also currently exist along Kaneplex Road and a transformer substation is located immediately west of the site (Figure 3-13).



Figure 3-12. Sanitary Sewer on Kaneplex Road at Proposed Pilot Plant Site (recently installed to serve Public Safety Facility)



Figure 3-13. Transformer Substation on Old Landfill Road adjacent to Proposed Pilot Plant Site

3.8.2 Environmental Consequences of the Proposed Project

Because of the short construction duration (approximately four months), the demand on existing utilities services to support construction of the Pilot Plant would be minimal. Impacts to existing public utility systems are expected to be negligible during the construction period, as direct use of utilities would be limited to electrical lines. It is expected that temporary portable sanitary wastewater facilities would be provided and wastewater would be transported by commercial services for disposal. Potable water would be provided by temporary onsite water tanks. Electrical power would be provided by temporary connections to nearby power lines and use of portable generators to operate construction tools and machinery.

Operation of the Pilot Plant would require connections to existing potable water, sewer, electrical, and communications lines. Connecting to these utilities would not require major upgrades to any existing public utility infrastructure. As discussed in Section 3.8.1, the necessary infrastructure needed for the Pilot Plant has been installed for the construction of the Kane County Public Service Facility. The proposed Pilot Plant would tie into these existing lines. Accessing the utilities would have a minor impact as the supply lines currently abut the project site along Kaneplex Road. As the utilities currently exist and would meet the Pilot Plants requirements; there are no needs for offsite utilities or associated right of ways.

The daily water demand from the Pilot Plant, when it is operational under the 30 days funded by DOE, would be limited to the needs of a workforce of 9 employees (approximately 250 gpd) and the process water requirement for the SHR (3,290 gpd), for a total of 3,540 gpd. *As noted in Section 3.6.2, this total daily rate represents 0.07 percent of the existing wells and spring capacity that supply the City of Kanab. Therefore, it is expected that the Pilot Plant demand for potable water would have a long-term minor impact on capacity of the Kanab potable water system. Depending on the water quality composition, the process wastewater could be recycled back into the facility, which would reduce the process water demand by up to 850 gpd.*

The daily sanitary wastewater generated from the Pilot Plant during operation would be approximately 250 gpd. The City of Kanab's existing sewer system would have the capacity to meet this demand without the need for upgrades. This total daily rate represents 0.07 percent of the two lagoons currently utilized by the City of Kanab. Therefore, it is expected that the wastewater generated by the Pilot Plant would have a long-term minor impact on capacity of the Kanab wastewater system. Viresco obtained a will-serve letter from the City of Kanab dated October 13, 2010 (Appendix C) confirming that the City can and would furnish water and sewer service to the proposed Pilot (City of Kanab, 2010a).

Total daily process wastewater discharge would total approximately 850 gpd, which would be directed to a storage container for potential reuse in the proposed plant. Viresco intends to recycle this effluent depending on the water composition. Prior to recycling, Viresco would test the water quality of the stored process wastewater to determine the feasibility of reuse at the facility. If the process wastewater can be used, some form of water treatment may be employed (e.g., water filtering device) and the recycled water would be supplied back into the fuel feed system. If the process wastewater cannot be recycled, then a licensed contractor would transport, treat, and dispose of the process wastewater offsite and the effluent would not be discharged into the public wastewater system. Therefore, process wastewater would not have an impact to the City of Kanab's wastewater system.

Electricity would be supplied by Garkane Energy, which is expected to have adequate capacity to serve the Pilot Plant. Viresco obtained a will-serve letter from Garkane Energy on August 8, 2011 (Appendix C) stating with some improvements made to the existing electrical system Garkane Energy has the means to provide 225kW of electricity to the proposed Pilot Plant. The improvements include easements, necessary system improvements, and a 3 phase 12.5kV power line constructed and ran to the site. The implementation of these improvements would be connected actions for the proposed project. The necessary improvements would consist of the installation of connection wiring between an existing power transmission line on Old Landfill Road adjacent to the proposed Pilot Plant site (see Figure 3-13) and the site proper. This connection wiring would cross Old Landfill Road and not require any new easements or rights-of-way to be acquired or disturbed. There would be no need for any upgrades to existing transmission features (Garkane Energy, 2011). The Pilot Plant would have a long-term but minor impact on Garkane Energy's ability to provide and distribute electricity.

The proposed Pilot Plant would utilize propane to fuel the boiler and regenerator, because natural gas is not available at the site. The propane would be delivered and stored on site in a 6,000 gallon tank. During operation the Pilot Plant would use approximately 660 gpd of propane; therefore, the propane stored on site in the 6,000 gallon tank would last nine days of testing. Viresco obtained a will-serve letter from Garkane Energy on June 15, 2011 (Appendix C) stating that they have a bulk facility located in the City of Kanab which can store up to 30,000 gallons of propane and, therefore, Garkane Energy has the ability to supply the proposed Pilot Plant with propane. The Pilot Plant would have a long-term minor impact on Garkane Energy's ability to provide and distribute propane.

Under the connected action, future operations up to 130 days per year, the process water requirement (4,130 gpd) and the daily potable water demand (approximately 250 gpd) for a total of 4,380 gpd, would represent 0.08 percent of the existing wells and spring capacity that supply the City of Kanab. Therefore, it is expected that the Pilot Plant demand for potable water would have a long-term minor impact on capacity of the Kanab potable water system.

The daily sanitary wastewater generated from the Pilot Plant during operation would remain approximately 250 gpd under the connected action and would continue represents 0.07 percent of the two lagoons currently utilized by the City of Kanab. Therefore, it is expected that the wastewater generated by the Pilot Plant under the connected action would have a long-term minor impact on capacity of the Kanab wastewater system.

Total daily process wastewater discharge under the connected action would total approximately 930 gpd. Similar to the 30-day scenario, it is anticipated that some or all of this effluent could be recycled depending on the water composition. Viresco is considering one of the following options to manage the process wastewater: 1) construct an evaporation pond to collect part or all of the process wastewater for recycling; 2) transport, treat, and dispose of the process wastewater offsite, similar to that described under the proposed action; or 3) discharge to the City of Kanab's sanitary sewer system. The total daily rate would represent less than one percent of the two lagoons currently utilized by the City of Kanab. Prior to storage in the evaporation pond or discharge into the public sewer system, Viresco would ensure that the process wastewater would be treated to standards as specified by the state (UDEQ, Division of Water Quality) and federal regulations. Therefore, it is expected that the process wastewater potentially generated by the Pilot Plant would have a long-term minor impact on capacity and performance of the Kanab wastewater system. Kanab's wastewater lagoons would have the capacity to meet this demand without the need for upgrades. The use of Kanab's wastewater system would be based on specifications and a defined sampling plan agreed upon between Viresco and the City of Kanab.

Electricity would continue to be supplied by Garkane Energy. Under the connected action the Pilot Plant would require an additional 40 kW of electricity which is expected to have a long-term minor impact on Garkane

Energy's ability to provide and distribute electricity. The Pilot Plant would utilize approximately 1,934 gpd of propane under the connected action; as stated above Garkane Energy has a bulk facility located in the City of Kanab which can store up to 30,000 gallons of propane and, therefore, a long-term minor impact on Garkane Energy's ability to provide and distribute propane.

3.8.3 Environmental Consequences of the No Action Alternative

Under the no action alternative, construction and operation of the Pilot Plant would not occur at the site; therefore, no impacts to public utilities would occur.

3.9 Public Health and Safety

3.9.1 Existing Conditions

3.9.1.1 Sensitive Receptors and Noise

During public scoping, several individuals raised concerns about the potential for noise impacts resulting from Pilot Plant construction and operations. The nearest public sensitive receptors to the proposed site are described below. The site is currently undeveloped property that has not been graded or prepared for construction. Site visits have been performed, the most recent in May 2011, and no signs of a past release are present at the site and no evidence was noted to indicate that hazardous or toxic materials are or have previously been disposed of or produced at the site.

For context purposes, Table 3.9-1 presents typical background daytime levels found throughout the U.S. under calm and still wind conditions, and Figure 3-14 shows typical sound levels of common noise sources.

The proposed site is located on property to be leased by Viresco on Kaneplex Road, which is used as an access road to the nearby Kane County Landfill and the county safety facility under construction. The closest sensitive receptors to the site are in a residential area over one mile to the northeast on S. Hopi Drive, which is separated from the project site by US 89A, a surface water feature (Kanab Creek), and the Kanab Airport. Predominant noise sources in the area are traffic on US 89A, aircraft associated with the Kanab Airport, Kane County Trap and Skeet Club, and trucks traveling to and from the Kane County Landfill and safety facility site (under construction) located approximately 1 mile southeast of the site along Kaneplex Road. However, the area is relatively quiet with background sound levels assumed to be similar to a rural area or normal suburban residential area, or around 35 to 45 A-weighted decibels (dBA) (see Table 3.9-1).

Table 3.9-1. Typical Nominal Background Sound Levels in Residential Communities

Description	Typical Range, dBA	Average, dBA
Very Quiet Rural or Remote Area	26 to 30	28
Very Quiet Suburban or Rural Area	31 to 35	33
Quiet Suburban Residential	36 to 40	38
Normal Suburban Residential	41 to 45	43
Urban Residential	46 to 50	48
Noisy Urban Residential	51 to 55	53
Very Noisy Urban Residential	56 to 60	58

Source: EPA, 1971.

dBA, Decibel, A-weighted scale

Sound Pressure Level (dBA)	Noise Source
140	Jet Engine (at 25 meters)
130	Jet Aircraft (at 100 meters)
120	Rock and Roll Concert
110	Pneumatic Chipper
100	Jointer/Planer
90	Chainsaw
80	Heavy Truck Traffic
70	Business Office
60	Conversational Speech
50	Library
40	Bedroom
30	Secluded Woods
20	Whisper

Figure 3-14. Sound Levels of Common Noise Sources (MPCA, 1999)

3.9.1.2 Fire Protection

Comments received during public scoping expressed concerns about the safety of the Pilot Plant and the ability of local fire protection and emergency services to respond to a potential fire, explosion, or release of hazardous material at the facility. The City of Kanab Fire Department was first organized in 1949 and has grown into a modern fire department which holds a primary response duty to over 4,300 citizens within its jurisdiction, covering an area over 14 square miles. The Department is staffed by a Fire Chief, Assistant Chief, 6 Captains, and fifteen firefighters. The Fire department is not only equipped to fight fires but they also perform Extrication, HAZMAT, Business Inspections, Pre-Planning of buildings, and Fire Code enforcement (City of Kanab, 2011a).

The Fire Department has two fire stations within the City limits of Kanab. The main station is located at 601 S 100E and the second station, called the Ranchos Station, is located on Powell Drive. The Ranchos Station is the closest to the proposed project site and houses the HAZMAT Operation Trailer (City of Kanab, 2011a). *The Department has been a member of a mutual aid agreement with volunteer fire departments such as the Fredonia Fire Department, meaning the Fredonia Fire Department also responds to incidents in Kanab (Fredonia Fire Department, 2010). As per a memorandum of understanding approved May 22, 2011 by the City of Kanab’s Council the Kanab Fire Department has now expanded to become a member of a mutual aid agreement between Kanab City, Long Valley Fire Department, East Zion Fire Department, and Cedar Mountain Fire Department (City of Kanab, 2011b).* All these fire districts would participate in the region’s mutual aid agreement and would assist in an emergency if called upon.

3.9.1.3 Healthcare Services

Public scoping comments raised concerns about the capacity of the local medical system to handle the potential injuries resulting from an accident at the Pilot Plant. The City of Kanab is served by the Kane County Hospital, which is located at 355 North Main Street in Kanab (Kane County Hospital, 2011). The Kane County Hospital has approximately 3 physicians, 3 physician assistants, over 100 employees and approximately 10 volunteers (Mary, 2011). This Medical Center contains a total of 25 beds. Based on the current population in the City of Kanab there are six beds per thousand people.

3.9.2 Environmental Consequences of the Proposed Project

Primary concerns to human health and safety would include chemicals stored onsite; potential injuries during construction and operation; potential air quality and noise impacts to public health; and the potential risk of an accident causing an ignition hazard.

Viresco would perform a Pre-Start-up Safety Review prior to construction and start-up of the facility to ensure the safest possible design and operations. Prevention is the first step in dealing with incidents where equipment, the environment, or personnel may be harmed by errors or accidents. For this reason the minimum requirements of the Occupational Safety and Health Association (OSHA) standards would be met or exceeded in the design of equipment, buildings, and access. Safety training shall also be given to employees and visitors (Viresco Energy, LLC, 2010).

Potential occupational health and safety risks during construction of the Plant are expected to be typical of risks for any other industrial/commercial construction sites. These include, but are not limited to: the movement of heavy objects, including construction equipment; slips, trips, and falls; the risk of fire or explosion from general construction activities (e.g., welding); and spills and exposures related to the storage and handling of chemicals and disposal of hazardous waste. The health and safety of construction workers would be protected by adherence to accepted work standards and regulations set forth by OSHA (29 CFR 1910, and 29 CF 1926).

During construction, safety measures such as providing fencing around the construction site, establishing contained storage areas, and controlling the movement of construction equipment and personnel would reduce the potential for an accident to occur. The proposed Pilot Plant would store a limited number of materials and chemicals which could potentially pose a health and safety risk to employees and surrounding communities. Should a spill happen it would immediately be reported to the jurisdictional authorities and technically qualified HAZMAT responders shall be hired for the cleanup. These firms shall be notified of the Pilot Plant's needs in advance of construction and shall be secured under contract to respond in the event of a spill in a timely and professional manner (Viresco Energy, LLC, 2010).

During the construction phase, noise would be localized, intermittent, and temporary. Nearby employees and residents could notice construction-related noise, but the resulting sound levels would be confined to daytime hours when most people are at work and away from home (i.e., between 7 am and 5 pm). Increases in noise levels during construction would mainly result from the use of heavy construction equipment (e.g., bulldozers, dump trucks, and concrete mixers). Given the equipment needs of the construction phase, the typical noise levels onsite would be expected to be within the range of 60 to 90 dBA. Table 3.9-2 presents average noise levels from construction equipment typically used at industrial construction sites.

Based on the noise levels listed in Table 3.9-2, the overall sound level during construction of the Pilot Plant would be approximately 93 dBA at the source, *which is a conservative estimate as it assumes all the equipment would be operating continuously and at the same time.* To predict the noise impact on potential sensitive noise receptors, the 93-dBA noise level was projected from the proposed construction site to the closest residential property by applying general noise attenuation principles. The decrease in sound level from any single noise source normally follows the "inverse square law." That is, the sound level change is inversely proportional to the square distance from the sound source. At distances greater than 50 feet from a sound source, every doubling of a distance produces a 6-dBA reduction in sound. Therefore, based on the 93-dBA sound level, it is expected that noise levels from the construction site would be approximately 63 dBA *or below* at 1,600 feet from the site, which is *relatively quiet (see Figure 3-14).* These levels are not expected to result in significant noise impacts, as the closest receptors are located greater than 2,640 feet away from the site *and the sound levels would decrease even further.*

Table 3.9-2. Common Equipment Sources and Measured Noise Levels at 50 feet

Equipment	Typical Noise Level in dBA
Backhoe Excavator	85
Bulldozer	80
Grader	85
Dump Truck	91
Pump	76
Compressor	81

Source: Bolt et al., 1971

dBA = A-weighted decibels.

Although sound levels from the Pilot Plant's equipment (e.g., the flare and gasifier) would depend on the final design and are unknown at this time, it is expected that equipment design would take into consideration any OSHA regulation to protect the health of the workers and the public. Per OSHA standards, the maximum acceptable noise level for any continuously noise-generating equipment is 90 dBA (29 CFR 1910.95). Assuming a maximum sound level of 90 dBA at the Pilot Plant's fence line, it is estimated that at 0.5 miles from the

property, the potential sound level from the plant would be less than 50 dBA, which is considered relatively quiet (see Figure 3-14). Sound levels at the closest receptor, more than 2,640 feet away, would be reduced further by the increased distance such that any potential increase in noise level would not be discernible and noise impacts during operations would be considered negligible to minor.

It is anticipated that the potential air quality impacts to public health would be minor as the air emissions from the Pilot Plant would primarily be limited to *de minimis* amounts of criteria pollutants. The facility would fall under the small source exemption (R307-401-9), which allows very small sources of air pollution more flexibility to make changes in their emissions as long as they remain eligible for the exemption. Section 3.5 describes impacts to air quality and the ambient air quality standards that represent the maximum allowable atmospheric concentrations that may occur and still protect public health and welfare within a reasonable margin of safety.

Viresco would ensure that all restricted areas are clearly marked to indicate that access is restricted and that unauthorized presence within the area constitutes a breach of security. Adequate physical barriers to impede movement (i.e. fencing around the perimeter of the Pilot Plant and additional fencing around materials stored on site) would be put in place to prevent unauthorized access and protect public health and safety.

Major process operation failures have been considered in the engineering and design such that the system design is sufficiently flexible and conservative to help prevent such occurrences. An automated shutdown system would be designed into the process that would safely shut down the process should a piece of equipment fail (Viresco Energy, LLC, 2010). In case of a power outage, the system would be left in a safe state. Inflows to the gasifier and regenerator (coal slurry, steam, hydrogen, etc.) would stop, except for nitrogen purge. Lack of fluidizing feed gases would cause the fluidized beds in the gasifier and regenerator to slump. The nitrogen purge would sweep out the gases in the vessels. Syngas product line from the gasifier would vent to the flare. Regenerator exhaust gas would vent to the atmosphere. The flare would still operate. Heating of the boiler would stop along with steam production (Raju, A. 2011).

3.9.2.1 Fire Protection

As discussed above, the City of Kanab fire department is well staffed, and it is supported by additional districts under a mutual aid agreement. Any of these fire departments would be available to assist in a fire emergency if needed. As per the conditional use permit, which was approved by the City of Kanab Planning Commission, the Pilot Plant's stack design must be submitted to the Kanab City Fire Chief for approval to ensure the fire suppression system to be installed is consistent with the applicable fire codes. Construction and operation of the Pilot Plant would involve the use of flammable and combustible materials that pose an increased risk of fire or explosion at the proposed project site; however, the probability of a significant fire or explosion is very low. Furthermore, the site is surrounded by undeveloped lands for several hundred feet in all directions, which provides a substantial buffer area protecting the public from a potential catastrophic incident. A potential catastrophic incident during operations is discussed in the following subsection. The fire department within the City has the capacity, and is equipped to respond to a major fire or hazmat emergency at the proposed site if necessary. For comparison, Garkane Energy has a bulk capacity facility located on West Powell Drive in Kanab that can store approximately 30,000 gallons of liquid propane as stated in their will-serve letter (Appendix C). Any incidents that may occur during construction or operation would not increase the demand on fire protection services beyond the available capacity of currently existing services. The construction and operation of the Pilot Plant on the proposed project site would not displace any fire protection facilities, nor would it conflict with local and regional plans for fire protection services.

3.9.2.2 Potential Catastrophic Accident Scenario During Operations

The Pilot Plant would be designed with appropriate safety features, including rupture disks on pressurized vessels conforming to ASME standards and the delivery and storage of coal in bags to prevent ignition of coal dust. Pressure relief valves on the gasifier would be vented to the flare consistent with SOP's for such units. In the event of catastrophic failure of the gasifier, gases could escape from the gasifier. These gases would be those components expected in the syngas product from the gasifier. Equipment will be included in the Pilot Plant to monitor potential releases of syngas (such as a CO alarm). The safety system for the gasifier would be designed during detailed engineering to address credible hazards. For example, the safety system would be designed to shut down the gasifier feeds in the event of a significant failure of the gasifier.

However, a potential catastrophic accident scenario during plant operations would be the result of an explosion simultaneously involving the 6,000-gallon propane storage tank and the 18,000-gallon hydrogen storage tank. The EPA software model, Risk Management Program (RMP)*Comp Ver. 1.07, was used to analyze the offsite impact of this explosion by determining the blast radius. The model calculated that the radius of impact from such an accident would extend to a limit of approximately 0.3 mile from the proposed site (EPA, 2011). The 0.3-mile radius is indicated in Figure 3-5, previous. There are no residences located within this radius. Two former residential buildings are indicated in Figure 3-5 just within the 0.3-mile radius directly north of the proposed site; but these buildings are associated with the current construction of the Jackson Flat Water Supply Storage Project and would not be occupied for residential use in the future. Plant workers and individuals in vehicles on adjacent roadways would be the only population directly at risk.

With modern safety features and practices in place, the risk of a catastrophic accident at the proposed Pilot Plant is extremely low. Table 3.9-3 below presents the estimated accident rates for storage of liquid propane and liquid hydrogen. The accident rates are based on industry statistics compiled by the EPA's RMP (Belke, 2000). As shown in the table, a 6,000 gallon tank of liquid propane would have a probability of causing an accident 3 times in 100,000 years (3.0×10^{-5} accidents per year), and an 18,000 gallon tank of liquid hydrogen would have a probability of causing an accident 2.5 times in 1,000 years (2.5×10^{-3} accidents per year).

Table 3.9-3. Preliminary Analysis of Accident Risk at the Proposed Pilot Plant

	<u>Liquid Propane</u>	<u>Liquid Hydrogen</u>
<u>Accidents per Mlbs stored/year*</u>	<u>0.0012</u>	<u>0.24</u>
<u>lbs/gallon</u>	<u>4.2</u>	<u>0.584</u>
<u>gallons</u>	<u>6,000</u>	<u>18,000</u>
<u>lbs</u>	<u>25,200</u>	<u>10,512</u>
<u>Mlbs</u>	<u>0.0252</u>	<u>0.010512</u>
<u>Accidents per year</u>	<u>0.00003024</u>	<u>0.00252288</u>

*Source: Belke, 2000

Mlbs = million pounds; lbs = pounds

Note: Nitrogen is not included in the Table as it is an inert gas and not explosive.

In the very unlikely event of a catastrophic accident occurring at the Pilot Plant site, emergency response would be focused on rescue and medical attention for surviving workers, and control of the fire at the plant site and potential brush fires resulting from the explosion. Initial medical response for a maximum of 9 plant workers would be within the capacity of the Kane County Hospital with reliance on medivac helicopter transport to larger regional medical facilities if necessary. The Kanab Fire Department has the capacity to provide initial response for containment of potential brush fires resulting from the incident and would call for mutual aid from regional responders as needed.

3.9.2.3 Healthcare Services

The potential for accidents and injuries to personnel during both construction and operation of the proposed Pilot Plant would be comparable to that of a small industrial facility and would not exceed the capacity of local healthcare services. The temporary construction jobs created by the proposed Pilot Plant could cause an influx of temporary residents to the City of Kanab. Currently the City has 6 hospital beds per thousand residents. The Hill-Burton standard is 4.5 hospital beds per thousand residents and the U.S. average as of 2007 was 2.7 hospital beds per thousand residents (Pearson, 2009). Should all of the temporary construction workers relocate to the City of Kanab, the reduction in healthcare capacity would be extremely small. The ratio of hospital beds per thousand residents would remain around 6 which is above the Hill-Burton standard and well above the U.S. average. The operation of the Pilot Plant would require nine full time employees who would likely live in Kanab

Hill Burton Act of 1946: established the objective standard for the number of hospitals, beds, types of beds, and medical personnel needed for every 1,000 people. The Hill Burton standard is 4.5 beds per thousand residents (E-Notes, 2009).

or the general area. Should any employees relocate to the area it would be a relatively small number. Although the proposed project would increase the number of residents potentially requiring medical care, the ratio of hospital beds per thousand residents would remain at approximately 6 and, therefore, no impacts are expected.

3.9.3 Environmental Consequences of the No Action Alternative

Under the no action alternative, construction and operation of the Pilot Plant would not occur at the site and increased safety risks associated with the Pilot Plant would not occur. Additional air emissions and emergencies, such as accidental spills and injuries to workers, would not occur and, therefore, no impacts to the public health and safety would be expected.

3.10 Socioeconomics and Environmental Justice

3.10.1 Existing Conditions

The existing conditions for socioeconomics and environmental justice describe population, income, housing, and labor force characteristics in a comparative manner from the smallest geographic units in the immediate vicinity of the sites (census tracts and blocks, municipalities, or counties depending on the parameter reported) to increasingly larger geographic areas (municipalities, counties, states, and the United States depending on the parameter reported). This comparative approach provides a general idea of how characteristics immediately surrounding the site, which has the greatest potential to be impacted by the proposed project, relate to trends in larger geographic areas. This approach is particularly important to ascertain the potential for disproportionate adverse impacts to populations for environmental justice concerns.

The project site is located in the City of Kanab, Kane County, Utah. It is also located in Census Tract 1302, Block Group 1, and Block 1124. Census data reported in this section are mainly taken from the 2005 – 2009 American Community Survey 5-Year Estimates, though Census 2000 and Census 2010 data are reported in a few instances. Few data have been released in the region for the 2010 Census at this time.

3.10.1.1 Population and Housing

Comparative population values for 2000 and 2010 are provided in Table 3.10-1. Overall, the population of the state of Utah increased at a considerably greater rate than the United States from 2000 to 2010 (23.8 percent for Utah compared to 9.7 percent for the U.S.). The populations of Kane County and the City of Kanab followed a similar pattern to the state; however, at a slower rate of increase. The 2010 population of the City of Kanab was 4,312, which represented approximately 61 percent of the Kane County population (7,125) (U.S. Census Bureau, Census 2000; U.S. Census Bureau, Census 2010).

Table 3.10-1. Comparative Population (2000 – 2010)

Area	2000 Population	2010 Population	Percent Change (2000 – 2010)
United States	281,421,906	308,745,538	+9.7%
Utah	2,233,169	2,763,885	+23.8%
Kane County	6,046	7,125	+17.8%
City of Kanab	3,564	4,312	+21.0%

Sources: U.S. Census Bureau, Census 2000; U.S. Census Bureau, Census 2010

Estimated average housing characteristics from 2005 through 2009 are provided in Table 3.10-2. Of Kane County's 4,763 housing units approximately 42.3 percent were vacant, which is a considerably higher rate than for the United States (11.8 percent) and Utah (9.5 percent), though the geographic areas closest to the site exhibited vacancy rates lower than the national or state rates (7.8 percent for Census Tract 1302 and 8.7 percent for the City of Kanab). The proportions of homes that were occupied by renters versus owners were similar for all geographic areas covered, though the national values show a greater tendency toward renter-occupancies. Median home values were similar among all of the geographic areas, though within Utah, values tended to be higher than for the United States except for the Kane County-wide median value of \$181,100, which was slightly

lower. Median contract rents within Kane County, Census Tract 1302, and the City of Kanab were considerably less than for the United States or Utah (U.S. Census Bureau, 2005 – 2009 American Community Survey 5-Year Estimates).

The median sale price in 2010 for homes in Kane County was \$187,500, and in 2011 (through August) the median sale price was \$155,000, which was a decrease of approximately 17 percent. In Utah as a whole, the median sale price in 2010 was \$190,000, and in 2011 (through August) the median sale price was \$175,000, a decrease of approximately 8 percent (Utah Association of Realtors, 2011). In Utah in 2010 the median number of days homes were on the market was 86, which is higher than in 2009 (78.5) and considerably higher than in 2006 (23.5) (Realestatehomesutah.com, 2010).

3.10.1.2 Taxes and Revenue

The Utah individual income tax rate is a single rate of five percent for all income levels (Utah State Tax Commission, 2011). The City of Kanab's property tax rate can fluctuate from year to year (e.g., if property values decrease, rates increase); in 2010 the property tax rate was 1.0415 percent of assessed value (Johnson, 2011). The City of Kanab levies a seven-eighths percent sales tax on retail sales of tangible personal property, services, and meals (City of Kanab General Ordinances, Section 6-103).

Table 3.10-2. Housing Characteristics (2005 – 2009 Estimated Averages)

Area	Housing Units	Vacancy Rate	Percentage Owner Occupied (of occupied units)	Percentage Renter Occupied (of occupied units)	Median Value	Median Contract Rent
United States	127,699,712	11.8%	66.9%	33.1%	\$185,400	\$675
Utah	919,334	9.5%	72.0%	28.0%	\$208,100	\$656
Kane County	4,763	42.3%	76.2%	23.8%	\$181,100	\$410
Census Tract 1302	1,913	7.8%	80.8%	19.2%	\$207,900	\$457
City of Kanab	1,717	8.7%	78.4%	21.6%	\$197,600	\$457

Source: U.S. Census Bureau, 2005 – 2009 American Community Survey 5-Year Estimates

3.10.1.3 Economy and Employment

Estimated average labor force and income characteristics from 2005 through 2009 are provided in Table 3.10-3. During this period, the unemployment rates in the City of Kanab (1.4 percent), Census Tract 1302 (2.2 percent), and Kane County (3.0 percent) were considerably lower than in Utah (5.1 percent) and the United States (7.2 percent). The civilian labor force in Kane County consisted of 2,991 individuals, of which more than half were from Kanab (1,730). The per capita income in Kanab (\$20,138) was lower than the other geographic areas, approximately 11 percent lower than Utah (U.S. Census Bureau, 2005 – 2009 American Community Survey 5-Year Estimates).

Table 3.10-3. Estimated Labor Force and Income Characteristics (2005 – 2009 Estimated Averages)

Area	Civilian Labor Force	Percentage Unemployed	Per Capita Income
United States	152,273,029	7.2%	\$27,041
Utah	1,319,805	5.1%	\$22,684
Kane County	2,991	3.0%	\$24,515
Census Tract 1302	1,933	2.2%	\$28,478

Area	Civilian Labor Force	Percentage Unemployed	Per Capita Income
City of Kanab	1,730	1.4%	\$20,138

Source: U.S. Census Bureau, 2005 – 2009 American Community Survey 5-Year Estimates

The industries that provide the greatest number of jobs in Kane County include leisure and hospitality; government; trade, transportation, and utilities; and education, health, and social services. The major employers in Kane County include Best Friends Animal Sanctuary, Aramark (Lake Powell Resorts), Kane County Hospital, Kane County School District, Kane County Government, and the Federal Government (Economic Development Corporation of Utah, 2011).

In Kanab, the hotel capacity is 738 rooms (Kane County Office of Tourism, 2011). In 2010 in Utah as a whole, the hotel/motel occupancy rate was 59.7 percent, while in 2009 the rate was 57 percent (Utah Office of Tourism, 2011). Overall, local occupancy rates in the Kanab area were not readily accessible; however, tourism-related tax income in Kane County show varied results from 2007 through 2009. In 2007, Kane County received transient room tax revenues of \$593,000 while total local tax revenues from traveler spending were \$6,103,600. In 2008, the transient room tax generated \$695,600 while the local tax revenues from traveler spending was \$7,193,900, both increases from 2007. In 2009, transient room tax revenues decreased slightly from 2008 (1 percent) to \$688,400 while tax revenues from traveler spending decreased considerably from 2008 (26.8 percent) to \$5,267,900 (Utah Office of Tourism, undated).

3.10.1.4 Environmental Justice

Population composition and poverty status information is provided in Table 3.10-4. Data for Block Group 1 and Block 1124 (in which there was no population) are from the 2000 Census (more recent data were not available) and the remaining geographic areas are 2005 through 2009 estimated averages. The population composition in the area of the site was predominantly white alone with each of Census Tract 1302, Block Group 1, Kanab, and Kane County being at least 93.5 white alone. These proportions are greater than the state of Utah (89.6 percent) and considerably greater than the United States (74.5 percent). The proportions of Hispanics or Latinos in the area of the site, at 2.3 to 3.7 percent for Block Group 1, Census Tract 1302, Kanab, and Kane County, were well below the averages for Utah (11.6 percent) and the United States (15.1 percent). The proportions of individuals and families with incomes below the poverty level in the area of the site were lower than the United States, with Kane County averages being roughly similar to those for the state of Utah. Poverty rates in the City of Kanab (9.0 percent for individuals and 6.4 percent for families) were lower than the rates for Kane County (10.6 percent for individuals and 8.0 percent for families) and Utah (10.4 percent for individuals and 7.2 percent for families) (U.S. Census Bureau, Census 2000; U.S. Census Bureau, 2005 – 2009 American Community Survey 5-Year Estimates).

Table 3.10-4. Population Composition and Poverty Status (2000 – 2009)

Parameter	Census Tract 1302, Block Group 1, Block 1124 ^a	Census Tract 1302, Block Group 1 ^a	Census Tract 1302 ^b	City of Kanab ^b	Kane County ^b	Utah ^b	United States ^b
Population Proportion White Alone	0%	96.7%	94.1%	93.5%	95.5%	89.6%	74.5%
Population Proportion Black or African American Alone	0%	0.08%	0%	0%	<0.1%	1.0%	12.4%
Population Proportion American Indian and Alaska Native Alone	0%	1.2%	2.7%	3.0%	2.1%	1.2%	0.8%
Population Proportion Asian Alone	0%	0.1%	0%	0%	0%	2.0%	4.4%
Population Proportion Other Minority Races and Multiple Races	0%	1.9%	3.2%	3.5%	2.4%	6.1%	8.0%
Population Proportion Hispanic or Latino Ethnicity (of any race)	0%	2.3%	3.7%	3.7%	3.2%	11.6%	15.1%
Proportion of Individuals with Incomes Below the Poverty Level	0%	4.5%	8.6%	9.0%	10.6%	10.4%	13.5%
Proportion of Families with Incomes Below the Poverty Level	0%	4.2%	5.8%	6.4%	8.0%	7.2%	9.9%

Sources: U.S. Census Bureau, Census 2000; U.S. Census Bureau, 2005 – 2009 American Community Survey 5-Year Estimates

^a Data from Census 2000; more recent data not available.

^b Data from 2005 – 2009 American Community Survey 5-Year Estimates

3.10.2 Environmental Consequences of the Proposed Project

3.10.2.1 Population and Housing

During construction, approximately 25 construction jobs would be created as a result of the project. It is assumed that the majority of the workforce would be drawn from local candidates; therefore, no increase in population or need for housing is anticipated.

During operations, Viresco anticipates that nine employees would work onsite. *Two of the operational positions would be fulltime annual positions at the Pilot Plant location. The remaining operational positions (7) would be located in Kanab during operational testing of the Pilot Plant.* Should any employees relocate to the area it would be a relatively small number (no more than nine employees) and negligible impacts on population and housing would be expected.

DOE understands and acknowledges that many local citizens are concerned about the potential effects of the proposed Pilot Plant on the desirability of real estate and property values in the Kanab area. But DOE is not aware of any firm basis on which to analyze the potential impacts from construction and operation of a pilot-scale research facility on housing prices. There is evidence that construction of a full-scale power plant (greater than 100 megawatts capacity) could affect local real estate values (Davis, 2010). However, the study results are not relevant due to the difference in scale compared to the proposed Pilot Plant, which would occupy approximately 1.5 acres of land, consume 5 tons of coal per day of operation, and be exempt from a state air permit. Furthermore, the recent national housing crisis and economic recession have already affected property values as indicated by the data in Section 3.10.1.1. Although the Pilot Plant would be visible from US 89A and from nearby residences, Kanab Creek Ranchos, and other elevated locations, the facility would have an effect on the viewshed comparable to that of other nearby facilities, including the airport, the Kane County Public Safety Facility, and the Kane County Landfill, as illustrated in Figure 3-7. The city has identified the area east of the

Kanab Municipal Airport as an appropriate area for potential similar development because of the proximity to other commercial-governmental uses, and because the area is distant from and not visible from the downtown area; nor would the facility be visible from properties in Fredonia. Based on the modest size of the proposed Pilot Plant, and because DOE has identified no potential for substantial adverse impacts on environmental resources in this EA, DOE concluded that potential effects of the project on property values would be negligible to moderate.

3.10.2.2 Taxes and Revenue

During construction, construction workers are assumed to be currently employed, and residing and paying taxes in the Kane County area. Increased sales transactions for the purchase of materials and supplies would generate some additional revenues for local and state governments, which would have a minor beneficial impact on taxes and revenue.

During operation, taxes would begin to be paid on the property, which would have a minor beneficial impact on taxes and revenue. Viresco anticipates that employees would live in Kanab or the general area. Thus, additional income taxes and property taxes could be collected by Kanab and the state if employees relocate to the area. Additional retail services and business employment may result if employees relocate to the area through a multiplier effect, yielding additional sales and income tax revenues for local and state governments. Also, operation of the facilities would require the purchase of supplies, equipment, and services in the local area, benefiting local businesses and increasing tax revenue. A minor beneficial impact would be expected.

3.10.2.3 Economy and Employment

During construction, regional economic activity would increase as local construction contractors and construction firms are hired for the project. The purchase of building materials, construction supplies and construction equipment, as well as spending by the construction workers, would add income to the economy. Twenty-five construction jobs would be created as a result of the project. This would have a short-term, minor beneficial impact on employment in the Kane County area.

During operations, daily spending by employees would positively affect businesses in the area. These expenditures commonly include gasoline, automobile servicing, food and beverages, laundry, and other retail purchases undertaken in the immediate area because of convenience and access during the course of the business day. In addition, secondary jobs related to the increased economic activity stimulated by the project may also be created. This would have a minor beneficial impact on employment in the Kane County area; as relatively few (nine) operational employees would be required.

Major outdoor recreational opportunities exist in the area in the form of protected public lands, which are a major source of economic activity in Kane County in the form of tourism. Numerous public comments were received expressing concerns about the potential for the Pilot Plant to affect the desirability of these recreational resources and thus reduce the important income generated by tourism. The Economic Development Corporation of Utah notes the following as the major recreational opportunities in Kane County: Grand Staircase-Escalante National Monument, Bryce Canyon, Zion Canyon, Grand Canyon, and Kodachrome and Coral Pink Sand Dunes State Parks (Economic Development Corporation of Utah, 2011). The closest of these to the project site is Grand Staircase-Escalante National Monument's far southwestern boundary, which terminates approximately nine miles to the east of the site. Coral Pink Sand Dunes State Park is approximately 10 miles to the west with a mountain range in between. It is highly unlikely that the presence of the proposed facility would disrupt the enjoyment of these recreational locations or associated local economic activity considering the relatively small size of the proposed facility (1.5 acres at a maximum of 72 feet in height) and the distances of the recreational lands from the site. As described in Section 3.5, air emissions from the proposed Pilot Plant would not adversely impact Class I areas. Although plant structures would be visible from US 89A and parts of the City of Kanab, particularly the Kanab Creek Ranchos neighborhood, the Pilot Plant would be located in proximity to the Kanab Municipal Airport, the Kane County Public Safety Facility, the Kane County Landfill, and existing communication towers, which are already visible from the same locations and have not detracted from regional tourism.

In a report titled "Prosperity in the 21st Century West – the Role of Protected Public Lands", the Sonoran Institute (2004), stated that diverse economies with an educated workforce employed in knowledge-based service industries (e.g., engineering, management consulting, finance, etc.) are in the best positions to take advantage of

nearby protected public lands from an economic standpoint. The fastest growth in the west has occurred where the predominant occupation is a white collar job, while the slowest growth has been where the economy depends on resource-dependent industries (e.g., agriculture and mining). Overall, the more diverse an economy, the faster it will grow, and the more specialized, the slower it will grow. Since 1970, in western states, the greatest source of real income growth has been non-labor income (e.g., investment income often associated with retirees) while the second greatest source has been growth in service-related income. Jobs in these industries are a mix that includes high-wage occupations in engineering, health, and business services, but also relatively low-wage occupations such as those found in restaurants and hotels. Since most of the growth in the rural west is in services, the success of rural communities depends in large part on their ability to go beyond lower-paid tourism jobs and attract higher wage services. Protected public lands draw people employed in such higher wage services (Sonoran Institute, 2004).

Development of the Pilot Plant would create nine new jobs in the Kanab and Kane County area in the high-wage service industry (engineering). Considering that the major employers in Kane County include Best Friends Animal Sanctuary, Aramark (Lake Powell Resorts), Kane County Hospital, Kane County School District, Kane County Government, and the Federal Government (Economic Development Corporation of Utah, 2011), development of the Pilot Plant would help diversify the existing local service industry. A more diverse local service economy could help leverage Kanab and Kane County's proximity to nearby protected public lands (e.g., Grand Staircase-Escalante National Monument) into further diversification and overall economic growth.

DOE understands and acknowledges that many local citizens and business owners are concerned about the potential effects of the Pilot Plant on the desirability of Kanab as a destination for tourism. But DOE has no basis for comparison with a similar project located in a community such as Kanab, which is uniquely situated within an hour or two of multiple national parks and recreation areas. The Pilot Plant would be comparable to a relatively modest commercial-industrial facility occupying an acre and a half. Although the Pilot Plant would be visible from US 89A and from nearby residences, Kanab Creek Ranchos, and other elevated locations, the facility would have an effect on the viewshed comparable to that of other nearby facilities, including the airport, the Kane County Public Safety Facility, and the Kane County Landfill, as illustrated in Figure 3-7. The city has identified the area east of the Kanab Municipal Airport as an appropriate area for potential similar development because of the proximity to other commercial-governmental uses, and because the area is distant from and not visible from the downtown area where tourists find lodging and dining establishments; nor would the facility be visible from downtown Fredonia. Based on the modest size of the proposed Pilot Plant, and because DOE has identified no potential for substantial adverse impacts on environmental resources in this EA, DOE concluded that impacts on tourism and the local economy would be negligible to minor.

3.10.2.4 Environmental Justice

As described in Section 3.10.1.4, the population compositions of Kane County, Kanab, Census Tract 1302, Block Group 1, and Block 1124 consist predominantly of white alone individuals. The minority compositions of these areas are less than the state of Utah and considerably less than the United States. The proportions of individuals and families with incomes below the poverty level are generally less than or similar to the values for the state of Utah and considerably less than the United States. Furthermore, the immediate project site is widely separated by distance from local residential areas. Therefore, any adverse consequences of construction or operation of the project would not disproportionately affect minority or low income populations *in Kane County*, and no environmental justice impacts would occur.

As described in Section 2.5.2, the proposed Pilot Plant site is within 2 miles of the northeastern boundary of the Kaibab Paiute Reservation in northern Arizona, which constitutes a minority population. However, as described for the environmental resources in this chapter, the operation of the Pilot Plant would not cause greater than minor adverse impacts on air quality, public health, land use, biological resources, surface water, groundwater, utilities, and wastes. Furthermore, the Pilot Plant is not expected to have greater than moderate adverse impacts on aesthetic conditions, which would not extend visually to the distance of the reservation. This EA acknowledges the potential for inadvertent discovery of Native American remains or artifacts, but DOE believes that the small extent of land area to be disturbed for the project (approximately 1.5 acres) would limit the potential for such a discovery, and DOE would continue consultation with the Kaibab Band to ensure that potential impacts in the event of such a discovery are minimized. Therefore, the proposed Pilot Plant is not expected to cause

disproportionately high and adverse effects on the Kaibab Paiute Tribe that would result in environmental justice impacts.

3.10.3 Environmental Consequences of the No Action Alternative

Under the no action alternative, construction and operations would not occur; therefore, there would be no changes to socioeconomics or environmental justice concerns as compared to the existing condition. Minor beneficial impacts to economic activity that would be associated with the proposed project would not be realized.

3.11 Biological Resources

3.11.1 Existing Conditions

The project site and much of southern and eastern Utah is located within the Colorado Plateaus Level III Ecoregion. Designed to serve as a spatial framework for research assessment, and monitoring of ecosystems and ecosystem components, ecoregions denote areas within which lands and aquatic areas, vegetation communities, and habitats (and the type, quality, and quantity of environmental resources) are similar. In general, within the Colorado Plateaus Level III Ecoregion, low elevation basins and canyons are sparsely vegetated with blackbrush (*Coleogyne ramosissima*), shadscale (*Atriplex confertifolia*), fourwing saltbush (*Atriplex canescens*), and galleta grass (*Pleuraphis jamesii*). Uplands and higher valleys have Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*), black sagebrush (*Artemisia nova*), and pinyon (*Pinus edulis*) – juniper (*Juniperus communis*) woodlands. Common wildlife within the Colorado Plateaus Level III Ecoregion include elk (*Cervus canadensis*), mule deer (*Odocoileus hemionus*), pronghorn (*Antilocapra americana*), coyote (*Canis latrans*), kit fox (*Vulpes macrotis*), white-tailed prairie dog (*Cynomys leucurus*), cottontail rabbit (*Sylvilagus* sp.), sage grouse (*Centrocercus* sp.), turkey vulture (*Cathartes aura*), burrowing owl (*Athene cunicularia*), pinyon jay (*Gymnorhinus cyanocephalus*), common raven (*Corvus corax*), and western diamondback rattlesnake (*Crotalus atrox*) (CEC, 2011).

During a site visit in May 2011, DOE determined that the project site is located within an arid environment that has limited vegetation resources and wildlife habitat existing within or directly adjacent to the study area. There are no surface waters or aquatic habitats onsite. Vegetation in the area includes scattered juniper, low sagebrush (*Artemisia arbuscula*), sand sagebrush (*Artemisia filifolia*), prickly pear and cholla cacti (*Opuntia* sp.), yucca (*Yucca* sp.), and various bunch grasses and forbs (Figure 3-15). Onsite habitats have historically been impacted by erosion, grazing, and recreational use of the area (Nash, Robert B., Dale R. Gourley, and Logan Hunt, 2010). No wildlife species were directly observed within the project site during the May 2011 site visit, though animal scat and burrows (approximately four inches wide) were present indicating wildlife utilization of onsite habitat. A site inspection performed in 2010 for an EA on the Kane County Public Safety Facility (approximately 0.5 mile southeast of the site along Kaneplex Road on land with similar characteristics to the project site) noted limited winter mule deer use and a turkey (*Meleagris gallopavo*) population adjacent to Kanab as well as limited use of the area by cottontail rabbits and jackrabbits (*Lepus* sp.), which are accustomed to disturbance. That EA also notes frequent and common disturbances in the area resulting from the shooting range, Kaneplex Rodeo Grounds, and the Kane County Landfill (USDOI/BLM, 2010).

DOE sent informal consultation letters to the USFWS and the UDNR Division of Wildlife Resources to verify that the project would have no effect on any federal- or state-protected species or critical habitat within the vicinity of the proposed project. In a response dated January 3, 2011, the USFWS acknowledged concurrence with DOE's determination that the proposed action would not significantly affect any protected species or their critical habitat. In a letter dated July 6, 2011, the UDNR Division of Wildlife Resources stated that it has no records of threatened, endangered, or sensitive species within the study area. UDNR noted that there are historical records of occurrences for bald eagle (*Haliaeetus leucocephalus*), ferruginous hawk (*Buteo regalis*) and southwestern willow flycatcher (*Empidonax traillii extimus*) in the vicinity, all of which are included on the Utah Sensitive Species List (see Appendix A).

Bald eagles typically nest in larger trees close to coastal areas, bays, rivers, lakes, or other bodies of water that reflect the general availability of primary food sources including fish, waterfowl, and seabirds. Ferruginous hawks may nest on the ground or in trees in a variety of habitat types. Juniper trees, which are found onsite, are often used as nest sites in Utah; however, ferruginous hawks typically utilize trees on the sides or summits of hills

and avoid areas of intensive agriculture or high human disturbance (NatureServe, 2010). The southwestern willow flycatcher nests in relatively dense riparian tree and shrub communities associated with rivers, swamps, and other wetlands (USFWS, 2010).



Figure 3-15. Typical Vegetation on Proposed Pilot Plant Site

The Kaibab Band of Paiute Indians submitted a list to DOE of plants and animals of cultural concern to the tribe, which is included in Appendix B. The list is fairly extensive and includes many relatively common species (e.g., mice and most small birds). Thus, it is likely that a number of these species either utilize onsite habitat or are in the general area and could utilize it.

3.11.2 Environmental Consequences of the Proposed Project

Development of the Pilot Plant would involve disturbing up to 1.5 acres of land that has a history of disturbance in the general area of ongoing human disturbances containing sparse vegetation and marginal wildlife habitat. During initial land-clearing activities, wildlife would be displaced from the site due to human activities (e.g., equipment movement) causing avoidance of the area. Some individuals, most likely smaller less-mobile species, may perish due to collisions with equipment. All onsite vegetation would be removed during this effort. Development of the site would result in a loss of habitat for any species currently utilizing onsite resources or those in the area that could; however, vast amounts of similar habitat exists in the area, thus, minor impacts would be expected. In addition, during operations, generated noise and human activities onsite may cause avoidance of the area by some wildlife species; however, this effect would be negligible considering other developments already operating in the area (e.g., Kane County landfill, Kanab Municipal Airport, shooting range) that already cause some degree of avoidance. Air emissions from the construction and operation of the Pilot Plant would be very small and would not be toxic to plants or animals in the region, including those in northern Arizona, or to people utilizing these natural resources (see Section 3.5).

DOE consulted with UDEQ and UDNR and determined that there are no state water quality standards that would trigger a requirement for installation of animal exclusion devices to eliminate hazards to wildlife from contact with the stormwater detention basin or potential future evaporation pond. Likewise there are no local ordinances that require such devices. No such exclusionary devices are currently in use on the Kanab wastewater lagoons, and DOE is unaware of any such exclusionary devices being used on other existing impoundments or stormwater detention basins in Kanab. However, Viresco has agreed to monitor the water quality to confirm that such impacts would not occur and to include exclusionary devices if the monitoring results indicate that potential impacts to wildlife may occur. DOE will require that Viresco develop the monitoring plan as part of the

Mitigation Action Plan for this project. DOE will require that Viresco consult with the UDEQ and DNR, the USFWS and Native American tribes regarding the parameters to be monitored and the levels that would trigger the installation of exclusionary devices, prior to approving the monitoring plan.

No impacts to federal- or state-protected species would be expected under the proposed action or connected action. The USFWS has acknowledged that the project would not significantly affect any federally protected species or critical habitat. The UDNR Division of Wildlife Resources has acknowledged that there are no records of protected species on the site and that the only occurrences in the general area are for bald eagle, ferruginous hawk, and southwestern willow flycatcher. Based on the habitat utilization characteristics for these species described in Section 3.11.1, the only one of these species that could utilize onsite habitat is the ferruginous hawk; however, it is highly unlikely that any would nest onsite considering the site's proximity to human disturbances, particularly Kanab Municipal Airport. Furthermore, initial land clearing would be performed outside of the raptor/migratory bird nesting season (discussed further in the following paragraph); thus, no impacts to species listed on the Utah Sensitive Species List would be expected.

In a letter to DOE commenting on the Draft EA dated September 22, 2011 (see Appendix E), the USFWS characterized the site as low desert scrub habitat and asked that impacts to migratory birds be addressed, specifically those included in the USFWS Birds of Conservation Concern 2008 and the UDNR Division of Wildlife Resources Utah Comprehensive Wildlife Conservation Strategy. The USFWS birds of conservation concern for Region 6, which includes Utah, includes three species that occur in the area and could utilize onsite scrub/shrubland habitat for nesting: ferruginous hawk, loggerhead shrike (*Lanius ludovicianus*), and Bewick's wren (*Thryomanes bewickii*). Overall, these species generally nest from March 1 through August 1 (USFWS, 2008; USFWS, 1999; and NatureServe 2010). As previously stated, ferruginous hawk is unlikely to utilize onsite habitats due to nearby human disturbances. The Utah Comprehensive Wildlife Conservation Strategy lists two migratory bird species as "species of greatest conservation need" that utilize low desert scrub as primary or secondary habitat: crissal thrasher (*Toxostoma crissale*) and Lucy's warbler (*Vermivora luciae*). Both of these species nest in riparian vegetation and, thus, would not be expected to nest onsite (UDNR/DWR, 2005). The USFWS letter also asked that raptors be addressed; there are four raptor species listed in USFWS' Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances that may utilize onsite habitats for nesting: ferruginous hawk, northern harrier (*Circus cyaneus*), short-eared owl (*Asio flammeus*), and burrowing owl (*Speotyto cunicularia*). Overall, the nesting period including all of these species is from March 1 through August 31 (USFWS, 1999). In order to avoid the potential "take" of migratory birds (i.e., pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product), initial land clearing would be performed outside of the raptor/migratory bird nesting season of March 1 through August 31.

No impacts of a possible take of migratory birds would occur; however, over the long term, nesting and foraging habitat would be removed due to development of the Pilot Plant, which would result in 1.5 acres of habitat loss; impacts would be minor as vast amounts of similar habitat would continue to exist in the area. In a letter to DOE dated September 22, 2011 USFWS asked that mitigation be developed to compensate for habitat losses; however, DOE has determined that mitigation would not be necessary, because there are no regulations that protect migratory bird habitat, large amounts of similar habitat would continue to exist in the area, and there is nothing particularly unique or exceptional with regard to the impacted habitats. As previously stated, during operations, in order to avoid impacts to migratory birds that could result from their use of water in the potential evaporation pond under the connected action, Viresco would provide an appropriate bird exclusion device over the basin in the event that sampling and analysis of the retained water by a third party and verified by the appropriate state agency were to conclude that the water would present a potential hazard to wildlife. Thus, overall, minor impacts to migratory birds would be expected during construction and operation consisting of habitat loss.

To the extent that information on typical habitat utilization characteristics was reasonably available, DOE has performed research on the plants and animals of cultural significance to the Kaibab Band of Paiutes (listed in full in Appendix B). Many of the species listed are common and could utilize the onsite arid, shrubby habitat; therefore, DOE has listed the species that would not be expected to utilize onsite habitat as follows (Anderson, 1996; Cabeza Prieta Natural History Association, undated; Calflora, undated; Flora of North America, undated; NatureServe, 2010; UDNR/DWR, undated; and USU, 2004):

- Plants that typically occur on washes, alluvial fans, and/or rocky slopes – Indian mallow (*Abutilon incanum*), catclaw acacia (*Acacia greggii*), white bursage (*Ambrosia dumosa*), fetid marigold (*Dyssodia pentachaeta*), Engelmann's hedgehog cactus (*Echinocereus engelmannii*), claretcup cactus (*Echinocereus triglochidiatus*), Nevada Indian tea (*Ephedra nevadensis*), California barrel cactus (*Ferocactus acanthodes*), wolfberry (*Lycium andersonii*), Fremont wolfberry (*Lycium fremontii*), squaw bush (*Rhus trilobata* vars. *simplicifolia* and *trilobata*), wire lettuce (*Stephanomeria tenuifolia*), and turpentine broom (*Thamnosma montana*).
- Plants that typically occur in wetter habitats (e.g., river floodplains) – seepwillow (*Baccharis salicifolia*), wild clematis (*Clematis ligusticifolia*), smooth scouring rush (*Equisetum laevigatum*), spiny rush (*Juncus acutus* var. *sphaerocarpus*), field mint (*Mentha arvensis*), watercress (*Nasturium officinale*), desert tobacco (*Nicotiana trigonophylla*), giant common reed (*Phragmites australis*), Fremont cottonwood (*Populus fremontii*), Torrey mesquite (*Prosopis glandulosa* var. *torreyana*), coyote willow (*Salix exigua*), Goodding's willow (*Salix gooddingii*), tamarisk (*Tamarix chinensis*), broadleaf cattail (*Typha latifolia*), and canyon grape (*Vitis arizonica*).
- Plants not known to occur in the Kanab area – desert willow (*Chilopsis linearis*) and white brittlebush (*Encelia farinosa*).
- Animals that typically occur in or near surface waters – fish, frogs, ducks, northern raccoon (*Procyon lotor*), and bald eagle (*Haliaeetus leucocephalus*).
- Animals that typically occur in mountainous habitat – bighorn sheep (*Ovis canadensis*), mountain lion (*Puma concolor*), golden eagle (*Aquila chrysaetos* – nest cliffs or tall trees), and California condor (*Gymnogyps californianus*).
- Animals that occur near water and/or in caves, mines, or rock crevices – all Utah bat species.
- Animals not known to occur in the Kanab area – American bison (*Bison bison*) and all Utah prairie-dog species (*Cynomys* sp.).

The aforementioned plants and animals would not be affected by the proposed project. The remaining species listed as of cultural concern to the Kaibab Band of Paiutes (shown in full in Appendix B) either could utilize onsite habitat or DOE was unable to reasonably find information on their typical habitat characteristics, thus, they could not be verifiably excluded. During a site visit, DOE personnel noted sand sagebrush, yucca species, and prickly pear and cholla cacti as occurring onsite, each of which are included on the Kaibab list, though the yucca and cacti were not identified to the species level. In addition, the EA for the Kane County Public Safety Facility noted mule deer, cottontail rabbits, and jackrabbits on that site (USDOI/BLM, 2010) and, considering proximity to the project site, it is likely that they can be found onsite as well. Any species of cultural concern to the Kaibab Band of Paiutes currently utilizing onsite habitats, or those generally in the area that could utilize onsite habitats, could incur the impacts described above, including vegetation removal, possible mortality due to collisions with construction equipment (most likely for smaller less mobile species), wildlife avoidance and displacement, and habitat loss. Overall, adverse impacts to species of cultural concern to the Kaibab Band of Paiutes would occur; however, it is important to note that the 1.5-acre site is adjacent to a relatively large amount of land with similar habitat characteristics and many of the species included are common. Although individual mortality of some of the plant species and animal groups of cultural concern to the Kaibab Band of Paiutes potentially occupying the 1.5-acre site may occur, implementation of the proposed action would not be anticipated to threaten the local surrounding or regional existence of these species.

3.11.3 Environmental Consequences of the No Action Alternative

Under the no action alternative, construction and operations would not occur; therefore, there would be no changes to the biological resources of the project site as compared to the existing condition.

3.12 Surface Water

3.12.1 Existing Conditions

The project site is located within the Utah portion of the Kanab Basin (HUC 15010003) which encompasses approximately 630 square miles of Kane County in southwest Utah and drains a total area of 2,350 square miles in Utah and Arizona. The Kanab Basin contains 93.7 miles of streams; however, Kanab Creek, Johnson Wash and Skutumpah Creek are considered the only significant perennial streams in the drainage basin. Kanab Creek, located approximately one mile west of the proposed project site, is a tributary to the Colorado River. It originates below the rim of the Paunsaugunt Plateau near Alton and flows 29.7 miles south to the Utah-Arizona state line. Kanab Creek and Johnson Wash are the only streams in the drainage basin that have been catalogued by the Utah Division of Wildlife Resources. There are no catalogued lakes or reservoirs in the drainage basin. (UDNR/DWR, 2007). Annual precipitation in the City of Kanab is 5 to 15 inches per year (USDA/NRCS 2005).

The nearest natural surface water to the proposed Pilot Plant is Kanab Creek which is approximately one mile west of the site across US 89A and on the west side of the Kanab Airport. 303(d) of the CWA requires states to identify and develop a list of impaired waterbodies where technology-based and other required controls have not provided attainment of water quality standards. Section 305(b) of the CWA requires states to assess and report the quality of their waterbodies. Utah combined their 303(d) and 305(b) list into one report referred to as the *Water Quality Assessment 2010 Integrated Report*. The report identifies those waterbodies that are impaired and do not meet designated uses, and it establishes total maximum daily loads for pollutants of concern. Based on the Integrated Report, Kanab Creek and Johnson Wash are both considered impaired for total dissolved solids (UDEQ/DWQ, 2010).

3.12.2 Environmental Consequences of the Proposed Project

There are no surface water features within the proposed project site; therefore, no potential exists for direct impacts to surface waters. As there would be over 1 acre of disturbance, and construction activities could cause erosion of sediments into adjacent surface water features located offsite, Viresco would obtain a NPDES General Permit to ensure compliance with the UDEQ, Division of Water Quality sediment and erosion controls. To minimize potential impacts to water resources a General Permit would require the preparation of a SWPPP. This plan includes BMPs for erosion control and pollution prevention requirements. Considering that the nearest natural surface water (Kanab Creek) is approximately one mile west of the site across US 89A and on the west side of the Kanab Airport, it is unlikely that any natural water bodies would be affected during construction. BMPs would be installed and maintained during land-disturbing activities to further prevent the potential of indirect impacts to surface waters.

Preliminary site designs for the proposed facility include a stormwater detention basin. The detention basin would be designed to capture the first flush of the stormwater per City ordinance. As the City storm drain system does not extend to the proposed site; the overflow from this basin would flow north, in the direction of the Jackson Flat Impoundment. An earthen dam constructed around the Jackson Flat Impoundment would prevent any flow into the impoundment. Storm runoff would likely infiltrate into the soil or evaporate before reaching any surface water body. The site designs have been approved by the City of Kanab as in compliance with their ordinances; thus, it is anticipated that adequate stormwater management would be included in the design and runoff would be contained onsite to the extent possible to minimize flooding and erosion impacts to nearby natural or man-made surface waters.

During construction and once operational, Viresco would maintain a SPCC Plan developed under federal and state regulations for avoidance, minimization, and response to pollutant spills that could occur. The plan would include the following items;

- Confirmation that the Pilot Plant's operations manual meets applicable regulations;
- Description of the Pilot Plant's maintenance and inspection program relative to spill prevention and control;
- Provisions to keep maintenance and inspection records current;
- Descriptions of spill prevention technology used at the Pilot Plant;

- Procedures to contain and recover oil or hazardous substances spilled during onsite transfers;
- Training procedures for personnel regarding spill prevention and control;
- Inspection and preventive maintenance procedures regarding spill prevention and control; and
- Security procedures regarding spill prevention and control.

By implementing the SWPPP and the SPCC Plan, the potential for impacts to surface waters from runoff pollutants or accidental spills would be negligible.

As discussed in Sections 2.7.1 and 2.7.3, approximately 3,290 gpd of process water would be supplied by the City of Kanab and 850 gpd of process wastewater would be generated, which would either be recycled or treated and disposed of offsite by a licensed contractor. Under the connected action (130-day operation), the total process water demand would increase by almost 1,000 gpd for a total demand of approximately 4,130 gpd; approximately, 930 gpd of process wastewater would be generated.

Depending on the water composition, Viresco is considering one of the following options to manage the process wastewater under the connected action: 1) construct an evaporation pond to collect part or all of the process wastewater for recycling; 2) transport, treat, and dispose of the process wastewater offsite, similar to that described under the proposed action; or 3) discharge to the Kanab City sanitary sewer system. Prior to storage in the evaporation pond or discharge into the public sewer system, Viresco would ensure that the process wastewater would be treated to standards as specified by the state (UDEQ, Division of Water Quality) and federal regulations. To prevent the possibility of overflow, the pond would be constructed with above-ground berms around its perimeter. Additionally, Viresco estimates that the amount of stored recycled water in the pond would not exceed more than half of the pond's capacity at any given time. No direct withdrawals from or process discharges to surface waters would be associated with the operation of the proposed project under the proposed action or the connected action and, therefore, impacts to surface water resources from water use and wastewater disposal are expected to be long-term but minor.

3.12.3 Environmental Consequences of the No Action Alternative

Under the no action alternative, construction and operations would not occur; therefore, there would be no changes to surface waters as compared to the existing condition.

4.0 CUMULATIVE IMPACTS

The CEQ regulations implementing NEPA require the consideration of cumulative impacts as part of the review process (40 CFR 1508.7):

“Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant actions, taking place over a period of time.”

This section analyzes potential cumulative impacts to selected resource areas described throughout Chapter 3. The effects associated with the proposed project are analyzed in combination for their incremental contribution to cumulative effects when added to impacts from other planned and reasonably foreseeable actions. For an affected resource area, each reasonably foreseeable future action, including the proposed action, adds an increment to the total (cumulative) impact.

4.1 Existing and Reasonably Foreseeable Projects

4.1.1 Past Projects and Trends

The existing conditions described throughout Chapter 3 take into consideration the effects of past projects and activities on the regional environment; for example, state regulations and permitting processes for air quality take into account the effects of existing emissions sources, such as industrial emitters, as well as background levels. The land developments and projects that are most closely associated with potential incremental effects in combination with the proposed Pilot Plant are those in the immediate vicinity, including the City of Kanab and portions of Arizona north of downtown Fredonia. The downtown area of the City of Fredonia is approximately 3.5 miles south of the Pilot Plant site. The Kaibab Paiute Reservation occupies approximately 189 square miles just south of the Utah border and along Kanab Creek and AZ 389 southwest of the Pilot Plant site. Residential development in Kanab increased considerably in the early to mid 1970’s with the Kanab Creek Ranchos subdivision on the western side of Kanab Creek, which nearly doubled the size of Kanab (City of Kanab, 2011). Commercial development is generally centered around US-89 and US-89A, primarily in the downtown areas of Kanab and Fredonia. Agricultural development is located along US-89A, between Kanab Municipal Airport and the downtown area of Kanab and south of US 89A and AZ 389 in Fredonia. Specific larger past land development projects nearby include Kanab Municipal Airport, Kanab’s sewage lagoon system, Kane County Landfill, and the Fredonia Standby Facility. Development of each of these facilities resulted in surface disturbances and losses of natural land cover and associated wildlife habitats.

Kanab Municipal Airport occupies 167 acres on the west side of US 89A near the project site and began operation in 1948 (SkyVector, 2011). The airport was constructed near the eastern bank of Kanab Creek. It is likely that this development has resulted in some adverse environmental effects to the creek primarily resulting from sedimentation as well as the possible introduction of contaminants, e.g. aircraft fuel, as the runway and other developed areas represent a large area of impervious surface. Also, considering the proximity to the creek, it is likely that development of the airport resulted in the loss of riparian/floodplain land and vegetation, which can be important for overall water quality as riparian/floodplain and wetland soils and vegetation aid in absorbing contaminants from water prior to introduction to a watercourse. Development of the airport has likely caused some degree of avoidance of the area by wildlife, particularly birds, as a result of noise and vehicular/aircraft movements.

The City of Kanab developed sewage lagoons for municipal wastewater treatment in the late 1950’s, which are situated on the western bank of Kanab Creek near the Arizona border. This system consists of four lagoon cells covering approximately 110 acres, though only two of the cells are currently being utilized (City of Kanab, 2009a). Development of this lagoon system likely resulted in the removal of some natural riparian/floodplain land with similar impacts to those described for the airport. The major environmental concern associated with the operation of sewage lagoons consists of leakage of wastewater to groundwater and/or nearby surface waters. If any leakage has occurred, considering the close proximity to Kanab Creek, it is likely that some degree of water quality degradation would have occurred in the creek.

The Kane County Landfill was permitted in May 2011 and occupies 20 acres at the end of Kaneplex Road approximately 1 mile east of the project site (UDEQ, 2011a). Development and operation of the landfill likely results in a relatively large degree of eroded sediments, though there are no permanent receiving waters in the immediate vicinity.

The currently closed Fredonia Standby Facility, formerly used for petroleum refining and asphalt production, is located across the Arizona border along US-89A in Fredonia. Development and operation of the facility likely resulted in a degree of sedimentation to the nearby waterways and possibly Kanab Creek. There had been a leaking underground storage tank, which was successfully remediated to residential levels (ADEQ, 2011); however, any onsite releases of contaminants could have degraded water quality in Kanab Creek if allowed to migrate off the property.

In general, human development and activities in arid environments have led to a variety of adverse environmental consequences. A major influencing factor in the southwest has been agricultural development, particularly grazing by livestock. Animal grazing primarily causes effects related to disturbing the land surface, which results in soil compaction and erosion that can lead to degradation of aquatic habitats, and the trampling of vegetation. Thus, grazing activities can lead to large changes in a landscape, including the composition of vegetation communities and associated wildlife habitat (Lovich and Bainbridge, 1999).

The adverse effects of surface disturbances in arid environments have been severe, particularly in the Colorado Plateau area. When Mormon pioneers entered the area in the mid-1800's the landscape was dominated by perennial grasses and few natural herbivores occurred in the area. Soon after their arrival, grazing by the pioneers' livestock converted areas surrounding and connecting settlements into shrublands, generally dominated by sagebrush. Currently almost 90 percent of the Colorado Plateau is used by the ranching industry. In addition, deer populations have expanded considerably since 1900 due to the development of surface water sources, invasion of sagebrush, removal of natural predators, and a demand from the hunting community for high hunting success rates. To increase hunting opportunities, the State of Utah has also transplanted elk into the area. The overabundance of livestock, deer, and elk, as well as other human activities (e.g., energy exploration and the recreational use of off-road vehicles), have caused high herbivory and chronic land trampling, which has resulted in profound impacts on the Colorado Plateau environment, primarily through this conversion from grassland to sagebrush-dominated shrublands. In addition, biological soil crusts (i.e., communities of cyanobacteria, microfungi, lichens, and mosses), which are critical for soil fertility, moisture, and stability, have been severely reduced in terms of land cover by surface disturbances (Schwinning et al., 2008). Another important concern related to human disturbances is that the restoration of disturbed areas can take centuries to occur without active intervention, as plant growth and establishment is naturally slow under the extreme conditions of arid environments (Lovich and Bainbridge, 1999).

With respect to surface water resources, farming and the use of fertilizers has negatively affected water quality via runoff with excessive nutrient loads (e.g., nitrogen and phosphorous), which can lead to oxygen depletion of waterways as the resulting overgrowth of aquatic plants and algae is decomposed by bacteria. In addition, surface water qualities have been degraded as population growth has resulted in the need for increased wastewater treatment, and discharges from water treatment plants can also contain excessive nutrient loads. Human development has had another effect of degrading water quality as it is often centered around surface waters, particularly in arid environments. As development around surface waters occurred, it often resulted in a depletion of riparian vegetation communities, wetlands, and floodplains, which can serve as a filter for contaminants, such as excessive nutrients, prior to the water entering the associated surface water (UDNR/Division of Water Resources, 2001).

As human development encroached into arid landscapes, the development of linear corridors (i.e., roads, railways, powerlines, and pipelines) have had substantial effects of nearly complete destruction of soil conditions and plant cover in affected areas, soil erosion, habitat fragmentation, mortality of animals along roadways due to collisions with vehicles, introduction of invasive plant species, and increasing access to remote areas for illegal plant and animal collection. Mining activities have also increased, which have had adverse effects of completely altering directly affected lands, introducing toxic contaminants that can degrade water quality, and promoting fugitive dust emissions that decrease air quality. Recreational activities have had detrimental effects, particularly with respect to the use of off-road vehicles. Off-road vehicle use can cause destruction of soil stabilizers and soil

compaction, which reduces survival abilities of plants, increased wind and water erosion, and noise generation and associated wildlife disturbance. As human populations increase in areas, so do the spread of invasive exotic plant species, which can have negative interactions with native plants and cause large-scale changes in vegetation community compositions and associated wildlife habitats. Increased human development typically comes with increased emissions of air pollutants, such as ozone, sulfur dioxide, and various particulates, which can be injurious to native plant species and possibly promote conditions for the spread of invasive exotics (Lovich and Bainbridge, 1999).

Although air quality is generally good in the Kanab area, thermal inversions have been known to occur. During certain times when temperatures increase with elevation, as opposed to the norm of temperature decreases with increased elevation, warmer air acts as a “cap” trapping cooler air in valleys, which can persist for many days (Whiteman et al., 1999). During winter months, the UDAQ issues wood burning advisories through the news media and over the internet when ambient concentrations of PM 2.5 are elevated. Such wood burning alerts have been issued in northern Utah counties, including Salt Lake/Davis, Utah, Weber, and Cache; but state alerts are not issued for Kane County (Baldwin, 2011).

4.1.2 Ongoing and Reasonably Foreseeable Projects

For future actions to be relevant to the cumulative effects analysis, the actions must affect resources (be the cause of some type of effect whether beneficial or adverse) within the region of influence for the analysis. There are a few plans for development projects in the area of the proposed project site; most notable are plans to continue with the development of the Jackson Flat Water Supply Storage Project, which would consist of the construction of a dam embankment, water supply pipeline, water storage area (i.e. reservoir), and pump station. Below is a description of the Jackson Flat Water Supply Storage Project as well as other reasonably foreseeable projects.

Jackson Flat Water Supply Storage Project

The proposed project would include the construction of a dam embankment, water supply pipeline, water storage area, and pump station. The water supply pipeline, some of which is existing, would traverse through Sections 16, 21, 27, 28, and 33 of T43S R6W and Sections 3 and 4 of T44S R6W. The proposed storage facility (dam, water storage area, and pump station) would be an off-stream site, located mainly in Section 3 T44S R6W with water storage extending slightly into Section 10 T44S R6W. The proposed dam height of about 42 feet would retain 3,660 acre feet (AF) of water, inundating 212 acres. An additional 270 AF of storage would be provided due to excavation of materials for construction of the dam, for a total storage volume of 3,930 AF. The high water level would be at an elevation of 4,884 feet. During off-peak use times, the water storage facility would be filled using the existing pressurized irrigation system main line connecting to the proposed pipeline. During peak use times, the system would be able to draw water from the source (Kanab Creek) and the water storage facility at the same time. “Peak use times” indicates the dry summer months when water needed to irrigate land is highest.

Kane County Public Safety Facility

The proposed project would be located in Section 10, T.44S., R.6W., Salt Lake Base and Meridian containing approximately 18.57 acres. The site is accessed by a recently paved road which leads to the Kaneplex, and to the Kane County Landfill. The proposed project would consist of the construction and operation of a public safety facility to include a 200 bed jail, sheriff’s office, and related office space that potentially could include space for the Utah Highway Patrol, Kanab City Police Department, and the Driver License Division, as well as a parking lot and other ancillary facilities. Underground and overhead utility service lines would be brought to the site. An existing county road would provide access directly to the proposed facility.

Lake Powell Pipeline Project

An alternative route for the Lake Powell Pipeline (the Existing Highway Alternative) would pass no closer than 2 miles to the east of the proposed Pilot Plant site and the projects are otherwise unrelated. The pipeline would result primarily in linear, land-based impacts that DOE believes would not be cumulative with the site-specific, land-based impacts of the proposed Pilot Plant except with respect to impacts on habitat as discussed in Section 4.2.12.

Alton Coal Mine

The proposed Alton Coal Lease by Application (LBA) Tract would encompass approximately 3,576 acres of land in Kane County near the town of Alton. A Draft EIS was published in November 2011 by the BLM in response to Alton Coal Development's LBA for federal coal, which would be recovered using primarily surface-mining methods to produce approximately 2 million tpy over a 25-year life span (BLM, 2011). The mine would be located approximately 30 miles north of the proposed Pilot Plant site. If the mine were operational when the Pilot Plant would be completed, it could be a potential source of coal for the plant.

Other than those mentioned above, DOE is not aware of any other known or anticipated projects in or around the area of the proposed project.

4.2 Cumulative Impacts

4.2.1 Land Use

Construction and operation of the proposed project in combination with the Kane County Public Safety Facility could adversely impact uses of recreational areas associated with the Jackson Flat Water Supply Storage Project. Both facilities would represent obstructions to natural views from the recreational areas. Each of these three development projects would represent obstructions to residential development in the area by removing usable land from development consideration and make the surrounding area less desirable for residential use.

4.2.2 Aesthetics

Construction and operation of the proposed project in combination with the Kane County Public Safety Facility could adversely impact views from the recreational areas associated with the Jackson Flat Water Supply Storage Project and, to a lesser extent, residences to the northwest of the Pilot Plant site. Both facilities would represent obstructions to natural views, primarily from the recreational areas.

4.2.3 Geology and Soils

Approximately 1.5 acres of soils would be disturbed by development of the Pilot Plant and the majority of this land area would consist of impervious surfaces including a road and parking lot. Onsite soil erosion would occur; however, implementation of a SWPPP and standard BMPs would minimize potential soil erosion impacts. It is not expected that the Kane County Public Safety Facility would cause much of a permanent impact on geology and soils aside from the creation of additional impervious surfaces over soils for the footprint of the building and associated parking lot, etc. The Jackson Flat Water Supply Storage project would have minor impacts on the soils to be inundated, as they would generally stay in place. Overall long-term cumulative impacts are expected to be minor, as soils otherwise would likely be disturbed from potential future development along Kaneplex Road.

4.2.4 Cultural Resources

Two cultural resources, both of which have been determined by SHPO to be not eligible for inclusion on the NRHP, are located entirely within the proposed project area. Neither resource extends beyond the proposed project area, and it is unlikely that any subsurface deposits, including human burials, are associated with either resource. The discovery of prehistoric human remains at an archaeological site investigated during the course of the Jackson Flat Water Supply Storage project, however, has heightened concerns among the Kaibab Band of Paiute Indians that human remains may be encountered during construction for the present project. If any human remains are discovered, then such a discovery could be viewed as a cumulative impact of the projects. The incremental and cumulative impacts of other planned and reasonably foreseeable projects, including the Kane County Public Safety Facility project, would be negligible.

4.2.5 Air Quality

The state of Utah takes into account the effects of all past, present, and reasonably foreseeable emissions during the development of the SIP. The state accounts for all significant stationary, area, and mobile emission sources in the development of this plan. Estimated emissions generated by the proposed project would be *de minimis*. Therefore, the proposed project would have minor adverse cumulative effects on air quality.

4.2.6 Greenhouse Gases (GHG) and Climate Change

According to the International Panel on Climate Change (IPCC) (2007a), a worldwide environmental issue is the likelihood of changes in the global climate as a consequence of global warming produced by increasing atmospheric concentrations of GHGs. The atmosphere allows a large percentage of incoming solar radiation to pass through to the earth's surface, where it is converted to heat energy (infrared radiation) that is more readily absorbed by GHGs such as CO₂ and water vapor than incoming solar radiation. The heat energy absorbed near the earth's surface increases the temperature of the air, soil, and water.

GHGs include water vapor, CO₂, methane, nitrous oxide, ozone, and several chlorofluorocarbons. The GHGs constitute a small percentage of the earth's atmosphere. Water vapor, a natural component of the atmosphere, is the most abundant GHG. The second-most abundant GHG is CO₂, which remains in the atmosphere for long periods of time. Due to man's activities, atmospheric CO₂ concentrations have increased approximately 35 percent over preindustrial levels. Fossil fuel burning is the primary contributor to increasing concentrations of CO₂ (IPCC, 2007a).

According to the IPCC fourth assessment report, "warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level" (IPCC, 2007b). The IPCC report finds that the global average surface temperature has increased by approximately 0.74 degrees Celsius (°C) in the last 100 years; global average sea level has risen approximately 150 millimeters over the same period; and cold days, cold nights, and frosts over most land areas have become less frequent during the past 50 years. The report concludes that most of the temperature increase since the middle of the twentieth century "is very likely due to the observed increase in anthropogenic [GHG] concentrations."

The IPCC 2007 report estimates that, at present, CO₂ accounts for approximately 77 percent of the climate change potential attributable to anthropogenic releases of GHGs, with the vast majority (74 percent) of this CO₂ coming from the combustion of fossil fuels. IPCC and the U.S. Climate Change Science Program (CCSP) examined the potential environmental impacts of climate change at global, national, and regional scales. IPCC's report states that, in addition to increases in global surface temperatures, the impacts of climate change on the global environment may include:

- More frequent heat waves, droughts, and fires.
- Rising sea levels and coastal flooding; melting glaciers, ice caps, and polar ice sheets.
- More severe hurricane activity and increases in frequency and intensity of severe precipitation.
- Spread of infectious diseases to new regions.
- Loss of wildlife habitats.
- Heart and respiratory ailments from higher concentrations of ground-level ozone (IPCC, 2007b).

On a national scale, average surface temperatures in the United States have increased, with the last decade being the warmest in more than a century of direct observations (CCSP, 2008). Impacts on the environment attributed to climate change that have been observed in North America include: • Extended periods of high fire risk and large increases in burned area. • Increased intensity, duration, and frequency of heat waves. • Decreased snow pack, increased winter and early spring flooding potentials, and reduced summer stream flows in the western mountains. • Increased stress on biological communities and habitat in coastal areas (IPCC, 2007b).

The U.S., and particularly southwest region where the proposed project would be located, has experienced locally severe economic damage, plus substantial ecosystem, social and cultural disruption from recent weather-related extremes, including hurricanes, other severe storms, floods, droughts, heat waves, and wildfires. Climate change will constrain the southwest's over-allocated water resources, increasing competition among agricultural, municipal, industrial and ecological uses. Hot temperatures and extreme weather are likely to cause increased adverse health impacts from heat-related mortality, pollution, storm-related fatalities and injuries, and infectious diseases. In the U.S. and particularly the southern states, disturbances such as wildfire and insect outbreaks are

increasing and are likely to intensify in a warmer future with drier soils and longer growing seasons (IPCC 2007b).

Because climate change is a cumulative phenomenon produced by releases of GHGs from industry, agriculture, and land use changes around the world, it is generally accepted that any successful strategy to address it must rest on a global approach to controlling these emissions. In other words, imposing controls on one industry or in one country is unlikely to be an effective strategy. And because GHGs remain in the atmosphere for a long time and industrial societies will continue to use fossil fuels for at least 25 to 50 years, climate change cannot be avoided. As IPCC report states, “[s]ocieties can respond to climate change by adapting to its impacts and by reducing [GHG] emissions (mitigation), thereby reducing the rate and magnitude of change” (IPCC, 2007b).

According to the IPCC, there is a wide array of adaptation options. While adaptation will be an important aspect of reducing societies’ vulnerability to the impacts of climate change over the next two to three decades, “adaptation alone is not expected to cope with all the projected effects of climate change, especially not over the long term as most impacts increase in magnitude” (IPCC, 2007). Therefore, it will also be necessary to mitigate climate change by stabilizing the concentrations of GHGs in the atmosphere. Because these gases remain in the atmosphere for long periods of time, stabilizing their atmospheric concentrations will require societies to reduce their annual emissions. The stabilization concentration of a particular GHG is determined by the date that annual emissions of the gas start to decrease, the rate of decrease, and the persistence of the gas in the atmosphere. The IPCC report predicts the magnitude of climate change impacts for a range of scenarios based on different stabilization levels of GHGs. “Responding to climate change involves an iterative risk management process that includes both mitigation and adaptation, taking into account actual and avoided climate change damages, co-benefits, sustainability, equity, and attitudes to risk” (IPCC, 2007b).

During the demonstration period, the proposed project would contribute about 543 tons (*493 metric tons*) of GHG emissions to the atmosphere. *For the connected action, the direct CO₂-equivalent GHG emissions would be approximately 2,588 tons (2,353 metric tons) based on 130 days of operation. Emissions of GHGs from the proposed Pilot Plant would contribute incrementally, but in a small way, to the overall effects on climate change.*

4.2.7 Groundwater

Development of the Pilot Plant would be expected to cause minor impacts to local groundwater resources primarily resulting from minimal amounts of potable and process water requirements to be supplied through the local public water supply system. In comparison to the anticipated demands on the public water system from the Kane County Public Safety Facility, the incremental demand by the Pilot Plant would be negligible. Therefore, cumulative impacts would not be substantially greater as a result of the proposed Pilot Plant project. A SWPPP would be implemented for each project to reduce the potential for stormwater runoff contaminated with toxic materials to infiltrate into the groundwater. Any potential impacts associated with the leaking of substances (i.e., fuels, oils, and other lubricants) into soils and entering groundwater aquifers would be avoided through the use of BMPs to prevent spills or leaks. The chance of spills or stormwater reaching the groundwater is unlikely due to the extreme depth groundwater is found; however, the use of BMPs would be implemented regardless as a precaution. The Kane County Public Safety Facility and Jackson Flat Water Supply Storage project would not be expected to further impact groundwater resources, as these projects would also follow NPDES guidelines to reduce the contamination of stormwater runoff and employ spill prevention measures.

4.2.8 Materials and Waste

Construction and operation of the proposed project in combination with the Kane County Public Safety Facility and Jackson Flat Water Supply Storage Project would cumulatively generate wastes that would require disposal, thus reducing the overall waste disposal capacities or regional waste disposal facilities. It is anticipated that the Pilot Plant’s contribution to these impacts would be minor.

4.2.9 Utilities

It is expected that local utilities would be capable of supporting the needs of the Pilot Plant within existing capacities. Additional development projects in the area, such as the Kane County Public Safety Facility would result in additional needs for local utility services, which would cause a cumulative impact in terms of reducing currently available service capacities; however, it is expected that the Pilot Plant’s incremental contribution would

be minor in comparison. Over the long-term, as additional projects are implemented, local utility providers may need to upgrade existing service infrastructure in the area (e.g., replacing existing potable water supply pipelines with larger diameter pipelines and adding new electrical substations).

4.2.10 Public Health and Safety

No reasonably foreseeable actions have been identified that would interact with Viresco's proposed project to generate cumulative adverse impacts to human health and safety.

4.2.11 Socioeconomics and Environmental Justice

The proposed project would contribute to cumulative positive revenue impacts for the state, county, and local governments. Increased employment and associated economic growth that could be associated with the Kane County Public Safety Facility and Jackson Flat Water Supply Storage Project would contribute cumulatively to these positive impact.

4.2.12 Biological Resources

Construction of the Pilot Plant would require the loss of 1.5 acres of arid land with a history of human disturbance vegetated with scattered juniper, low sagebrush, sand sagebrush, prickly pear and cholla cacti, yucca, and various bunch grasses and forbs. This land could represent habitat for a variety of terrestrial and avian species; no aquatic habitats are present. Lands to be disturbed for the Jackson Flat Water Storage Project and Kane County Public Safety Facility are generally similar to the project site. The Lake Powell Pipeline Project would be constructed a minimum of approximately 2 miles from the project site at its closest point and would span a wide area containing various habitats, likely including areas that are similar to the project site as well. Overall, development of each of the projects, cumulatively, would represent minor losses in vegetation and associated wildlife habitat as vast amounts of similar habitats would continue to exist in the affected areas. The Pilot Plant's contribution to cumulative impacts would be minimal as the other projects would disturb larger amounts of land, particularly the Lake Powell Pipeline Project. It is not expected that the "take" of any state or federally protected species would occur at the Pilot Plant site.

4.2.13 Surface Water

The Pilot Plant would increase the amount of impervious area in the project region, which in turn would increase the rates of stormwater runoff and erosion and the amount of runoff pollutants that could reach nearby waterbodies. Because a stormwater detention pond would be constructed at the proposed plant, it is expected that any increases in runoff, erosion rates, and pollutants would be reduced to negligible cumulative impacts to surface water resources. No direct withdrawals from or process discharges to surface waters would occur under the proposed action or the connected action and, therefore, cumulative impacts to surface water resources from water use and wastewater disposal are expected to also be negligible. In addition, because emissions from the Pilot Plant would be very small and concentrations would not exceed the NAAQS, it is anticipated that these emissions would result in minor impacts to the nearby Jackson Flat reservoir.

4.3 Projects Not Considered for Cumulative Impacts

The impacts of the following activities are acknowledged and discussed qualitatively; however, because of various factors and uncertainties associated with them, the EA has not included these actions in the cumulative impacts analysis for the proposed project.

Coal Mining

The proposed project would obtain coal as a commercial commodity from existing mines principally within the state of Utah. The quantities required for the proposed 30 days of operation funded by DOE (150 tons) or the potential future 130 day operation (650 tpy) are trivial amounts of an abundant commodity that would not affect the economic feasibility of a coal mine or measurably change the pace of mining operations. No specific mine has been identified as a source of coal, and no new mines are intended to be developed specifically to support the project. The effects of commercial coal mining are generally well known and well described and are not within the scope of this EA. The proposed project does not aim to change mining techniques and, for the proposed project, DOE has no decisions that would affect coal mining techniques. It is assumed that the coal intended for

the proposed project would be used as a feedstock for another facility in the event that the Pilot Plant is not constructed, because coal is an abundant and economical source of energy in the United States.

5.0 SHORT-TERM USES VERSUS LONG-TERM PRODUCTIVITY; IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS; AND UNAVOIDABLE ADVERSE IMPACTS

5.1 The Relationship Between Local Short-term Uses of the Environment and the Maintenance and Enhancements of Long-Term Productivity

The CEQ regulations require consideration of “the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity” (40 CFR 1502.16). Construction and operation of the Pilot Plant would require short-term uses of land, coal, and other resources. These pertain to the activities that have been described throughout Chapters 3 and 4 and include such effects as: aesthetic impacts from the conversion of vegetated, undeveloped land to an industrial facility; impacts on air quality from fugitive dust emissions during construction and minor emissions from the Pilot Plant; erosion and sedimentation impacts, which generally would be mitigated through the use of control measures; loss of vegetation and wildlife habitat caused by land-clearing activities; impacts on the capacity of public utility services such as drinking water; impacts to water resources from the use of groundwater for process water needs; and traffic impacts attributable to the transport of personnel and materials to/from the site.

With respect to long-term productivity, the proposed action would support DOE's objective of demonstrating and promoting innovative technologies that can provide the nation with clean, reliable, and affordable energy while reducing reliance on foreign oil. The long-term benefit of the proposed project would be to demonstrate an innovative gasification process that needs no oxygen in order to gasify eliminating costly air separation units, uses wet feedstock, eliminating energy intensive drying steps, displays the ability to use waste streams as feedstocks, while demonstrating the potential for reduced capital costs and higher conversion efficiencies than conventional partial oxidation-based processes.

Following the test runs under the DOE cooperative agreement, Viresco plans to seek additional funding for continued operations. These operations would be limited by the funding available and would probably not exceed 130 days of operation in any year, including a possible 90-day continuous test run. Otherwise, at the end of the lease negotiated from SITLA, Viresco would be responsible for decommissioning the Plant, removing structures and equipment, reclaiming the site and re-vegetating it to resemble a habitat similar to the pre-disturbance conditions. *The lease for the property is for 30 years; however, the lease states that early termination could occur. Upon termination of the lease, Viresco would be responsible for all decommissioning activities as described in Section 2.7.5.* The short-term use of the project site for the proposed Pilot Plant would not affect the long-term productivity of the project area. Project aspects that would enhance long-term productivity in the region include the direct, indirect, and induced creation of jobs and contribution to the economic output of the project area.

5.2 Irreversible and Irretrievable Commitments of Resources

The proposed project would commit Sec 10, T44S, R6W, Salt Lake base and meridian, SW4NW4NW4, Section 10, Kane County, Utah as the location for the Pilot Plant for the foreseeable future. Site preparation would include the grading of land to provide a developable site plan, which would impact vegetation and wildlife habitat. Although arguably these resources would be reclaimed in the future and would be revegetated to resemble similar pre-disturbance conditions, it is unlikely that they would be restored to their original conditions and functionality. Therefore, these commitments are considered irreversible.

A resource commitment is irreversible when primary or secondary impacts from its use limit future use options and irretrievable when its use or consumption is neither renewable nor recoverable for use by future generations.

The implementation of the proposed action would potentially result in the irretrievable commitment of building materials for construction of the Pilot Plant. Construction and operation of the Plant would require the irretrievable commitment of energy and small quantities of feedstocks including coal and lignocellulosic biomass. Water resources used by the Pilot Plant would be treated and recycled in the process for reuse under the DOE cooperative agreement for 30 days of operation or possibly returned to the environment through an evaporation pond under future operations. *The water would thus be returned to the environment in the form of water vapor.*

leaving the solids to be disposed of appropriately as nonhazardous or hazardous waste depending on characterization.

The implementation of the proposed action would require the commitment of financial resources by Viresco, its investors and lenders, and DOE for the construction, demonstration, and start-up of the Pilot Plant. However, these commitments are consistent with the purpose of and need for the proposed action as described in Chapter 1.

5.3 Unavoidable Adverse Impacts

Construction and operation of the proposed Pilot Plant would cause unavoidable air emissions. However, during construction particulate emissions would be controlled by using standard dust mitigation techniques (e.g., spraying of water over exposed soils), and air emissions from the Pilot Plant are considered minor and would not exceed significance thresholds. Adverse impacts during construction also include: the increase of stormwater runoff; the increase in construction traffic and associated noise and emissions, which would be localized impacts; and the use of construction materials, such as steel and concrete, which would be unavoidable, but would represent a small fraction of available materials. During operation, adverse impacts include the minor increase in air emissions, traffic and associated noise and emission impacts from commuting personnel and the transport of materials and wastes; however, these impacts are expected to be minor as the estimated number of vehicles would be low. Adverse impacts from the increases in stormwater runoff and water pollutants due to additional impervious area would be reduced from adherence to stormwater management controls. The visibility of the Pilot Plant facilities from US 89A, nearby residences, residences in Kanab Creek Ranchos, potential future recreation areas associated with Jackson Flat, and elevated locations near Kanab would result in a long-term minor to moderate adverse impact on local aesthetics.

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7.0 LIST OF PREPARERS

U.S. DOE – National Energy Technology Laboratory		
Mr. Joseph Zambelli	NEPA Document Manager	
PHE Environmental Team		
<i>Analyst</i>	<i>Responsibilities</i>	<i>Degrees and Experience</i>
Joseph Grieshaber	Project Manager	M.B.A., Finance M.S., Biology B.S., Biology 34 years experience, 21 years NEPA experience
Stacey Schueler	Deputy Project Manager	B.S., Environmental Science 9 years of experience in site remediation, natural resource studies and NEPA documentation.
Debra Walker	QA/QC Manager	B.S., Biology 33 years experience, 20 years NEPA experience
Anthony Becker	Land Use, Aesthetics, and Socioeconomics and Environmental Justice	M.S., Biology B.S., Biology 6 years NEPA experience
Jamie Martin-McNaughton	<u>Geology, Groundwater</u> , Sharepoint Administrator	B.S., Geology-Biology 8 years experience, 5 years NEPA experience
<u>Cynthia Ong</u>	<u>Utilities and Surface Water</u>	<u>M.S., Environmental Sciences</u> <u>B.S., Civil Engineering</u> <u>8 years of experience in general civil site design work and technical and writing support for DOE NEPA documentation.</u>
<u>Rachel Spangenberg</u>	<u>Materials and Wastes</u>	<u>B.S., Biology</u> <u>19 years of experience in the preparation of NEPA documentation and environmental compliance audits.</u>
LPES, Inc. Environmental Team		
Tim Lavallee	Air Quality	M.S. Environmental/Civil Engineering B.S. Mechanical Engineering 20 years of experience, 14 years of NEPA experience
WSA, Inc. Environmental Team		
John Raveslout	Cultural Resources	Ph.D. Anthropology M.A. Anthropology B.A. Anthropology 32 years experience, 27 years NEPA experience.

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8.0 DISTRIBUTION LIST**Federal Elected Officials**

The Honorable Paul Gosar

The Honorable Orrin G. Hatch

The Honorable Jon Kyl

The Honorable Mike Lee

The Honorable Jim Matheson

The Honorable John McCain

Native American Tribal Organizations

Thomas Beauty

Yavapai-Apache Community Council

Carmen Bradley

Kaibab Paiute Tribal Council

Charley Bulletts

Southern Paiute Consortium

Elda Butler

Fort Mojave Indian Tribe

Jeanette Cassa

San Carlos Apache Tribe

Lee Choe

San Juan Southern Paiute Tribe of Arizona

Tom Dalton

Moapa Business Council

Eldred Enas

Colorado River Indian Tribe

Lynn Fraher-Petach

Chemehuevi Indian Tribe

Tony Joe Jr.

Navajo Nation

Leigh Kuwanwisiwma

Hopi Tribe of Arizona

Ronnie Lupe

White Mountain Apache Tribe

Nora McDowell

Fort Mojave Indian Tribe

Alfreda Mitre

Las Vegas Tribal Council

DeeAnn Multine

Kaibab Band of Paiute Indians

Wendsler Nosie Sr.

San Carlos Tribal Council

Clinton Pattea

Fort McDowell Yavapai Tribal Council

Ramon Riley

White Mountain Apache Cultural Center

Manuel Savala

Chairman of Tribal Council

Ben Shelly

Navajo Nation

LeRoy N. Shingoitewa

Hopi Tribe of Arizona

Ivan Sidney Sr.

Hopi Tribe

Thomas Siyuja Sr.

Havasupai Tribal Council

LeAnn Skrzynski

Kaibab Band of Paiute Indians

Lora Tom

Paiute Indian Tribe of Utah

Charles Vaughn

Hualapai Tribal Council

Charles Wood

Chemehuevi Indian Tribe of the Chemehuevi
Reservation, Calif, Chemehuevi Tribal Council**Federal Offices/Agencies**

Bureau of Indian Affairs

Bureau of Land Management

Dixie National Forest

Grand Staircase-Escalante National Monument

Kaibab National Forest

National Park Service, Environmental Quality Division	U.S. EPA Region 9
U.S. Army Corps of Engineers	U.S. Fish & Wildlife Service, Utah Field Office
U.S. Department of the Interior	U.S. Geological Survey
U.S. EPA Region 8	Zion National Park

State Offices/Agencies

Administrative Counsel	Governor of Utah
Arizona Department of Environmental Quality	Public Lands Policy Coordination Office
Department of Air Quality	Office of the Governor of Utah
Arizona Department of Environmental Quality	Utah Department of Community and Culture
Arizona State Historic Preservation Office	Division of Wildlife Resources
Arizona State Land Department, Natural Resources	Utah Department of Natural Resources
Governor of Arizona	Utah State Historic Preservation Office

Regional and Local Offices

Harry Barber BLM Kanab Field Office Manager	Shannon McBride Kane County Land Use and Planning Commission
Douglas Heaton Council Chairman	Steve Peru Coconino County Manager
Scott Heaton Mayor of Fredonia	Carl Taylor Flagstaff Board of Supervisors
Michael Hendrix, P.E. Deputy Mohave County Manager	William Towler, FAICP Coconino County Department of Community Development
Duane Hoffman City Manager for Kanab	Ron Walker Mohave County Manager
Nina Laycook Mayor of Kanab	Fredonia Planning Commission
Van Mackelprang Kanab City Attorney	Kane County Office of Tourism

Libraries

Fredonia Public Library	Kanab City Library
-------------------------	--------------------

Interested Parties

Hans [did not give last name]	Halle Anders
Jaime Aalen	Laurel Anderson
Heather Aaron	Terri Anderson
Cynthia Abbott	Lee Anderson
Herbert Alexander	Mary Anderson
Alisa Alexander	K. John Armstrong

Paul and Karen Arndt	Trevie Clark
Patricia Atwater	Tim Clarke
Dr. Kathy Backus	William Cole
Joshua Baird	Don Collins
Marlene Barnes	Charles Combs
William Barnes	Jerilyn Connell
Eleanor Barr	Victor Cooper
John M. Barth	Victoria Cooper
Francis Battista	Mary Lou Cronin
Lynn Battista	Rich Csenge
Peter Bauer	Debra Csenge
Alan Beebe	Sue Dale
Russell Beesley	William Dale
James Bermant	Diane Decker
Valerie Bermant	Douglas Dewita
Charles Bishop	Brenda Domyan
Robyn Bjoring	Leonard J. Domyan
Mary Boisseau	Catherine Drinkard
Amber Bone	Robert Dye
Bill Booker	Michael Evangelista
Chris Boortz	Laura Fertig
Linda Borchert	Meg Fiorina
Richard Bradshaw	Hilda Fivecoat
Claudia Brescia	Tom Forsythe
Ted Brewer	Don Fox
Cheryl Brown	Wallace & Georgianne Garner
Marla Browne	Gwen Gaustad
Dixie Brunner	Arlea Gibson
Dennis Brunner	Allen Gillberg
Bobbi Bryant	John Gisler
Julian Carmona	Janice R. Gisler
Tom Carter	Nancy Goebel
Gregory Castle	Ed Gosnell
Von Del Chamberlain	Mary Greene
Sky Chaney	Robert Gurr
Raven Chiong	Lillian Gurr

Susan Hand	Nick McCausland
Mark Havnes	Lynda McEvoy
Robert Helper	Lori McGraw
Dan Helper	Tana McTeer
James R. Henley, Jr	Mike McTeer
Tracy Hiscock	Greg Metcalf
John Hiscock	Jean Mitrani
Roger Hoverman	Ron Murdoch
Robert Hubbard	Jerry & Gale Navarre
CB Hunter	Arthur and Deborah Navarrette
Elaine Ingrid	Mike Noel
Carole Isaacs	Christy Oprandy
Catherine Ives	Linda Osborn
Leslie Jacobs	Martin Ott
Gae L. Jacobs	Russell Parker
Vivienne Jake	Virginia Pecora
John Jefferis	Noel and Mary Poe
Jacqueline Johnson	Claudia Presto
Jeanette and Jess Johnson	Jo-Ann Rando-Moon
Ronald Jones	Elisa Rios
Bob Kaczowka	John C. Roberts
Beth Kampschror	Lee Stiles Russell-Hurd
Sandra Katz	Charlie Saba
Jennifer Kaufman	Sandra Saint
Byard Kershaw	Kathleen Salter
Don Kramer	Joseph Schulz
Lisa Ladd	Joseph Schulz
Stacy Lawson	Jim Shelton
Diane Leake	Shelly Sichta
Bob LeCour	John Sichta
Karen LeCour	Dan and Bonnie Smalling
June Lepley	Mary Smith
Clint Malnar	Shirley Smith
Faith Maloney	Annie Sorenson
Lydna Marpole	Laurence & Patricia Spanne
Sara Mathis	Sharon St. Joan

Mark Sterkel	Jim Walls
Kay Sullivan	Ellen Welsh
Deborah Swanson	Brittani Wero
Else Talboys	Carol Williams
Joan Thacher	Barbara Williamson
Bob & Betty Thompson	Caralee Woods
Tara Timpson	Wendy & Charles Wright
Mike Ullman	Susana Young
Thea Van Baal	Martha Young
Amanda Wallace	Connie Zweifel

Nongovernmental Organizations

National Tribal Environmental Council
Sierra Club

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APPENDIX A

Consultation

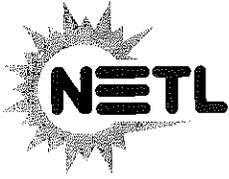
Federal and State Agencies (A1), Native American Tribes (A2)

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APPENDIX A1

Correspondence with Federal and State Agencies
USFWS, UT DNR, UT SHPO

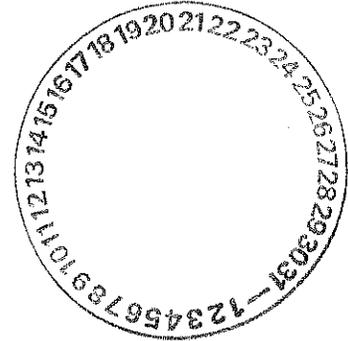
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NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA



December 1, 2010



Mr. Larry Crist
Field Supervisor
U.S. Fish & Wildlife Service
Utah Field Office
2369 Orton Cir, STE 50
West Valley City, UT 84119

Dear Mr. Crist:

The U. S. Department of Energy (DOE) is considering an action involving federal participation in the construction and operation of a pilot hydro-gasification plant to reduce coal and biomass into fuel in Kane County, Utah. The project is to be located at: Sec 10, T44S, R6W, Salt Lake base and meridian, SW4NW4NW4, Section 10, Kane County, Utah. This land is administered by the State of Utah, School & Institutional Trust Lands Administration. A description of the proposed project, site drawings and graphics depicting its location are provided as attachments.

As part of our coordination and consultation responsibilities, and to comply with Section 7 of the Endangered Species Act of 1973, as amended, we would appreciate receiving any information you have on wildlife resources, including endangered or threatened species or critical habitat, in the project area. Your thoughts on the potential impacts associated with the proposed project would also be appreciated.

Based on the nature and scale of the proposed pilot testing, DOE considers the proposed action to be one that would not significantly affect any endangered or threatened species or their habitat. We would appreciate a written response acknowledging your concurrence with DOE's assessment or indicating potential consequences that might result from the proposed action.

Should you require additional information, please contact me at the information provided below.

Sincerely,


NEPA Compliance Officer

<input checked="" type="checkbox"/>	Concur No Effect
<input type="checkbox"/>	Concur Not Likely to Adversely Affe
<input type="checkbox"/>	No Comment
	
U.S.F.W.S. - Utah Field Supervisor	
Date: 1/3/11	

Attachments



April 13, 2011

Gary Bennett
Utah Department of Natural Resources
Division of Wildlife Resources
P.O. Box 606
Cedar City, UT 84720-0606

Dear Mr. Bennett:

The U.S. Department of Energy (DOE) is considering providing federal funding for the construction and testing of a pilot hydro-gasification plant to reduce coal and biomass into fuel in Kane County, Utah. The project is to be located at: Sec 10, T44S, R6W, Salt Lake base and meridian, SW4NW4NW4, Section 10, Kane County, Utah (see the attached Site Location Map). This land is administered by the State of Utah, School and Institutional Trust Lands Administration. A description of the proposed project, site drawings and graphics depicting its location are provided as attachments.

As part of our coordination and consultation responsibilities, and to comply with Section 7 of the Endangered Species Act of 1973, as amended, we contacted the U.S. Fish and Wildlife Service on December 1, 2010. As evidenced in the attached copy of our correspondence, the Utah Field Supervisor indicated that the project is expected to have "no effect" on federally listed species.

We would appreciate receiving any information you have on wildlife resources, including state-listed species or critical habitat, in the project area. Your thoughts on the potential impacts associated with the proposed project would also be appreciated. Based on the nature and scale of the proposed pilot testing, DOE considers the proposed action to be one that would not significantly affect any endangered or threatened species or their habitat.

We would appreciate a written response acknowledging your concurrence with DOE's assessment or indicating potential consequences that might result from the proposed action.

Should you require additional information, please contact me using the information provided below.

Mr. Joseph Zambelli
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
PO Box 880
M/S: B07
Morgantown, WV 26507-0880
Email: joseph.zambelli@netl.doe.gov
Phone: (304) 285-4913

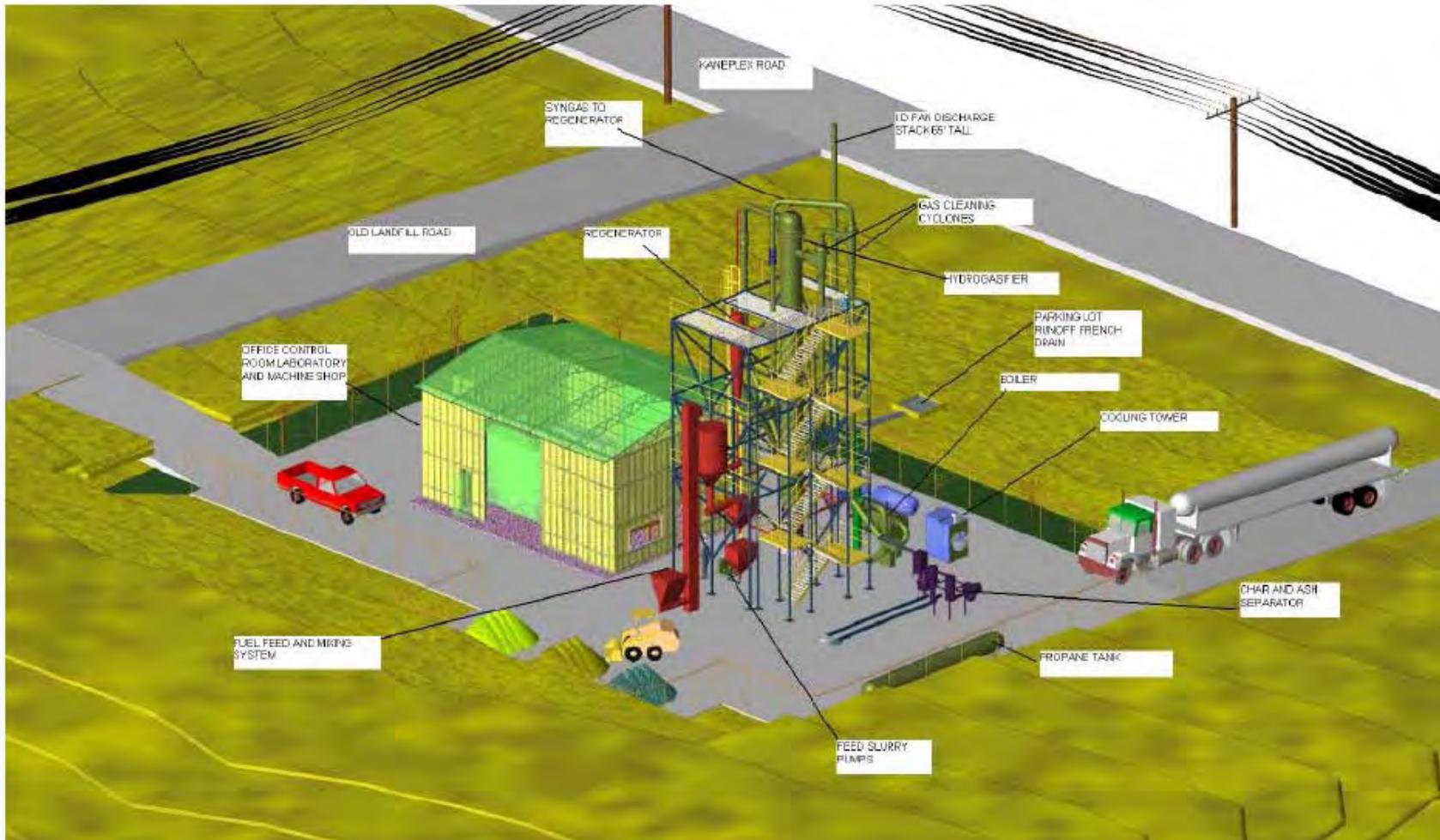
Fax: (304) 285-4403

Sincerely,

A handwritten signature in black ink that reads "Joseph Zambelli". The signature is written in a cursive style with a large, prominent 'J' and 'Z'.

Joseph Zambelli
NEPA Document Manager

Enclosures



Conceptual View of Pilot Plant Looking Northwest

Project Description

This project involves conducting a pilot-scale evaluation of the Steam Hydrogasification Reaction (SHR) process for converting carbonaceous feedstock such as coal and biomass into a clean, high-energy content product gas suitable for downstream production of a number of carbon-based fuels and chemicals including sulfur-free Fischer-Tropsch diesel, jet fuel, dimethyl ether and methane. Feedstocks to be used in this evaluation include a Utah sub-bituminous (and/or lignite) coal and at least one woody biomass material. The concept conceived is a fluid bed gasifier fluidized by steam and recycled hydrogen with sand as the primary bed material and a heat carrier connected by a standpipe and return line to a fluid bed regenerator (combustor) that heats the sand using char carbon and air. The pilot-scale gasifier to be constructed and operated in this project will have a feedstock throughput of up to 5 tons-per-day.

Field site preparation activities include minor excavation on 0.75 acres with a slope of 10 percent, utility trenching and installation of a concrete slab measuring 40 feet by 45 feet. A building will be erected on the slab. Exterior production structures and machinery will occupy an additional 5000 square feet. Maximum height is 67 feet. Stockpiles of sand, coal and biomass material will be stored onsite.



NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA



December 1, 2010



Mr. Larry Crist
Field Supervisor
U.S. Fish & Wildlife Service
Utah Field Office
2369 Orton Cir, STE 50
West Valley City, UT 84119

Dear Mr. Crist:

The U. S. Department of Energy (DOE) is considering an action involving federal participation in the construction and operation of a pilot hydro-gasification plant to reduce coal and biomass into fuel in Kane County, Utah. The project is to be located at: Sec 10, T44S, R6W, Salt Lake base and meridian, SW4NW4NW4, Section 10, Kane County, Utah. This land is administered by the State of Utah, School & Institutional Trust Lands Administration. A description of the proposed project, site drawings and graphics depicting its location are provided as attachments.

As part of our coordination and consultation responsibilities, and to comply with Section 7 of the Endangered Species Act of 1973, as amended, we would appreciate receiving any information you have on wildlife resources, including endangered or threatened species or critical habitat, in the project area. Your thoughts on the potential impacts associated with the proposed project would also be appreciated.

Based on the nature and scale of the proposed pilot testing, DOE considers the proposed action to be one that would not significantly affect any endangered or threatened species or their habitat. We would appreciate a written response acknowledging your concurrence with DOE's assessment or indicating potential consequences that might result from the proposed action.

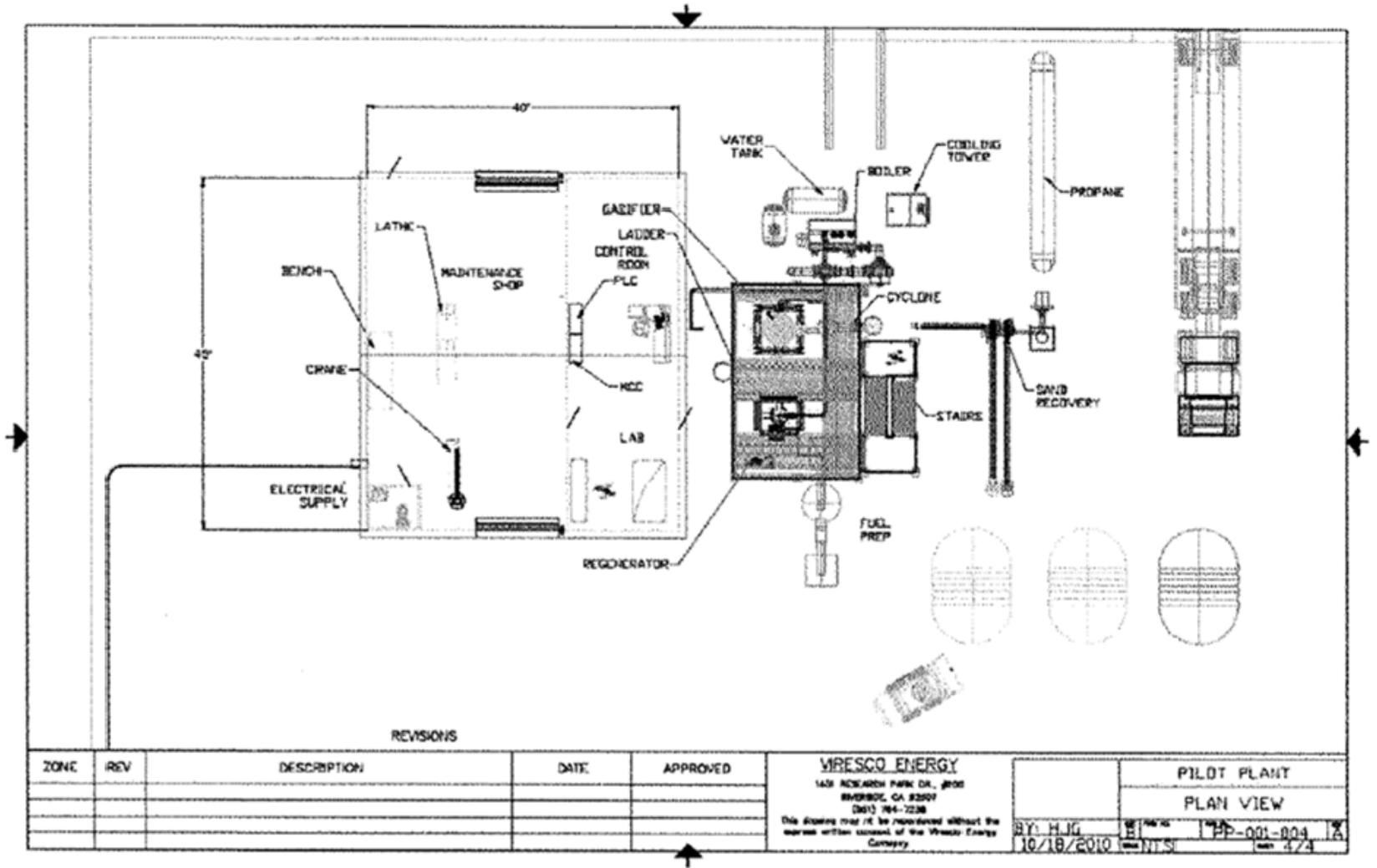
Should you require additional information, please contact me at the information provided below.

Sincerely,

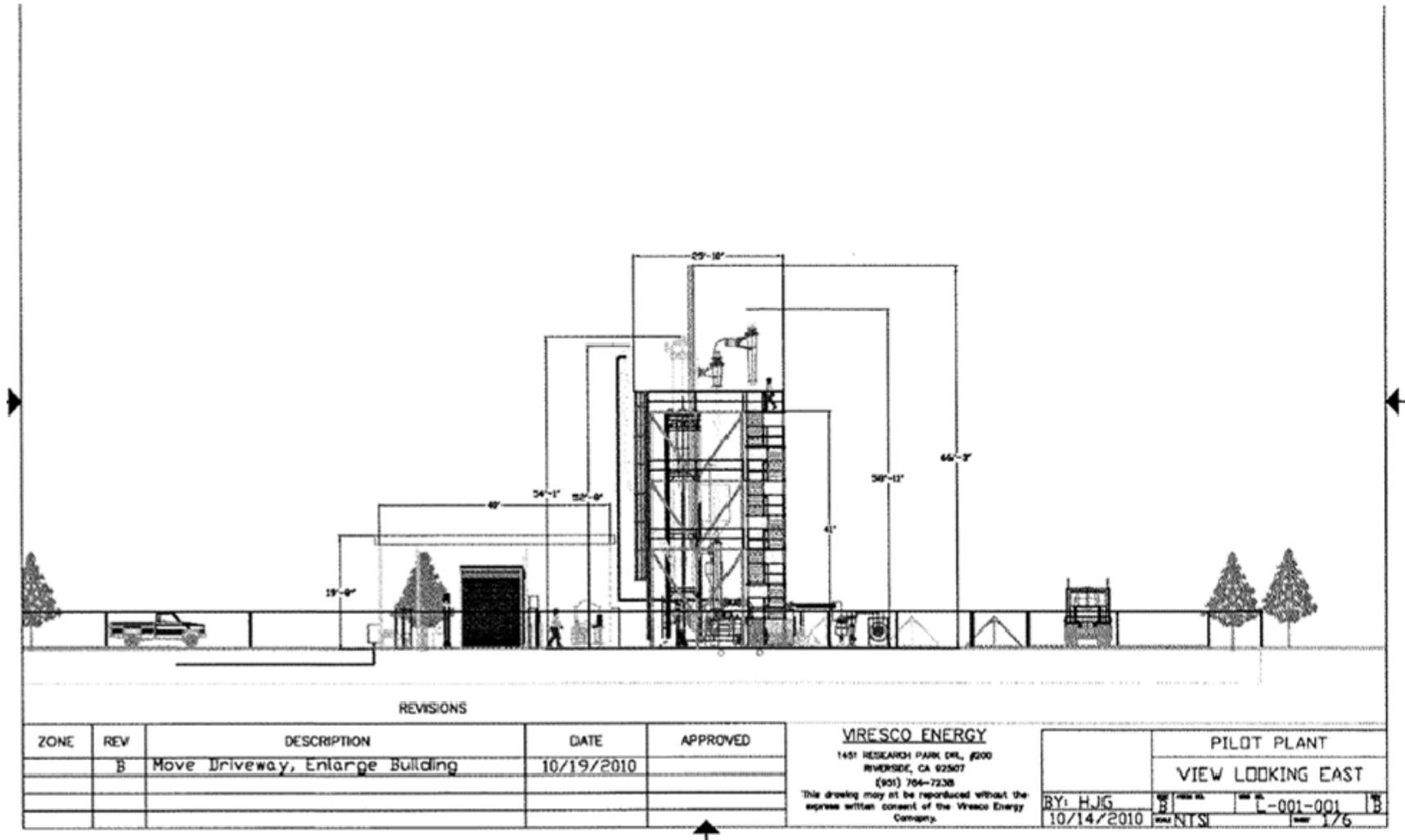

NEPA Compliance Officer

<input checked="" type="checkbox"/>	Concur No Effect
<input type="checkbox"/>	Concur Not Likely to Adversely Affect
<input type="checkbox"/>	No Comment
	
U.S.F.W.S. - Utah Field Supervisor	
Date: 1/3/11	

Attachments

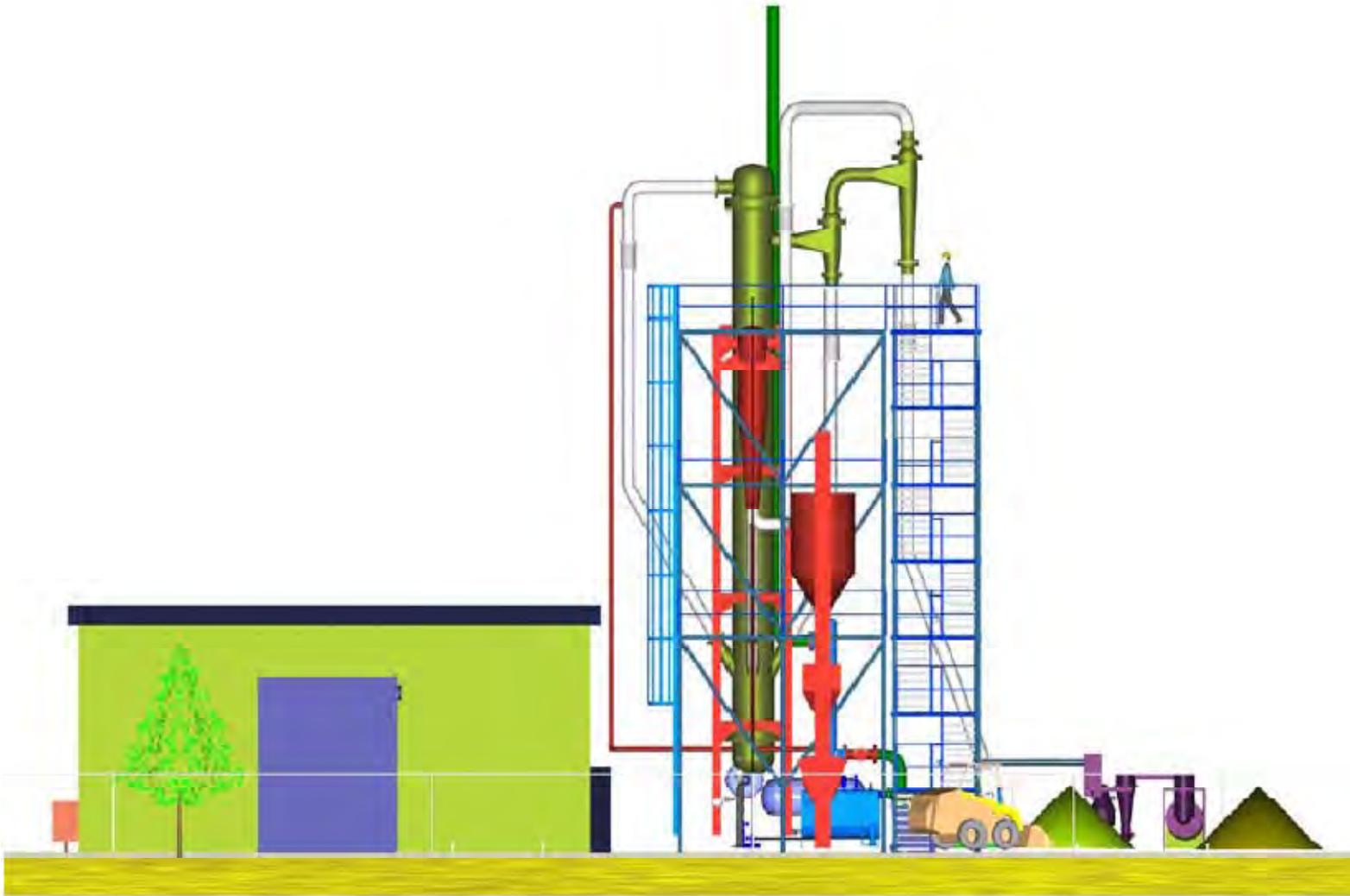


Plan View

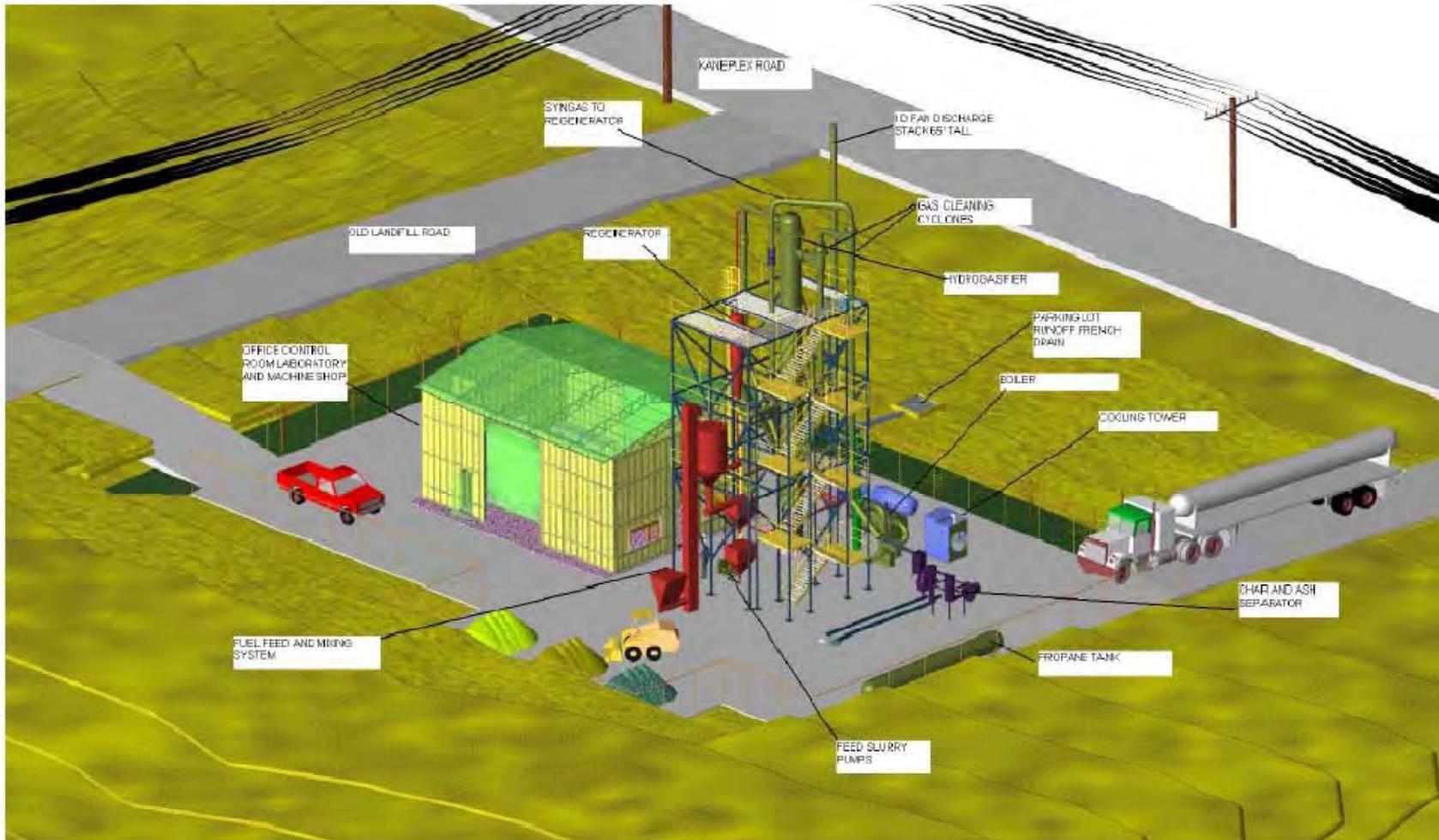


View Looking East

UT DNR



View Looking East 2



View Looking Northwest

From: Carmen Bailey [carmenbailey@utah.gov]
Sent: Tuesday, June 28, 2011 11:06 AM
To: joseph.zambelli@netl.doe.gov
Cc: Gary Bezzant; Judy Edwards; Rhett Boswell; Sarah Lindsey
Subject: hydro-gasification plant

Mr. Zambelli,

Thank you for your letter informing us about the proposed hydro-gasification plant project. We cannot submit a concurrence letter on this project at this time but we can provide you a list of sensitive species in the project area if you make a data request with our Data Manager, Sarah Lindsey, at 801-538-4759. Please contact her with your project information and she can conduct a search for state and federally sensitive species provided to you in a letter.

The Utah Division of Wildlife Resources typically provides comments on impacts to wildlife after we have received a draft Environmental Assessment or project proposal.

Please feel free to contact me with any further questions.

Thank you, Carmen

Carmen Bailey
Impact Analysis Coordinator
Division of Wildlife Resources
Department of Natural Resources
1594 West North Temple, Suite 2110
Salt Lake City, UT 84114-6301
office (801) 538-4751, fax (801) 538-4745
cell (801) 718-5954
carmenbailey@utah.gov



JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Wildlife Resources

JAMES F. KARPOWITZ
Division Director

July 6, 2011

Joseph Zambelli
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
P.O. Box 880
Morgantown, WV 26507

Subject: Species of Concern Near the Utah Coal & Biomass Fueled Hydro-gasification Pilot Plant Project

Dear Joseph Zambelli:

I am writing in response to your email dated June 28, 2011 regarding information on species of special concern proximal to the proposed Utah Coal & Biomass Fueled Hydro-gasification Pilot Plant Project to be located in Section 10 of Township 44 South, Range 6 West, SLB&M in Kane County, Utah.

The Utah Division of Wildlife Resources (UDWR) does not have records of occurrence for any threatened, endangered, or sensitive species within the project area noted above. However, in the vicinity there are historical records of occurrence for bald eagle, ferruginous hawk and southwestern willow flycatcher. All of the aforementioned species are included on the *Utah Sensitive Species List*.

The information provided in this letter is based on data existing in the Utah Division of Wildlife Resources' central database at the time of the request. It should not be regarded as a final statement on the occurrence of any species on or near the designated site, nor should it be considered a substitute for on-the-ground biological surveys. Moreover, because the Utah Division of Wildlife Resources' central database is continually updated, and because data requests are evaluated for the specific type of proposed action, any given response is only appropriate for its respective request.

In addition to the information you requested, other significant wildlife values might also be present on the designated site. Please contact UDWR's habitat manager for the southern region, Bruce Bonebrake, at (435) 865-6111 if you have any questions.

Please contact our office at (801) 538-4759 if you require further assistance.

Sincerely,

Sarah Lindsey
Information Manager
Utah Natural Heritage Program

cc: Bruce Bonebrake





May 13, 2011

Lori Hunsaker
 Deputy State Historic Preservation Officer
 Utah Department of Community and Culture
 300 South Rio Grande Street
 Salt Lake City, UT 84101

Re: Kanab Steam Hydrogasification Pilot Plant

Dear Ms. Hunsaker:

Viresco Energy's proposed project, Kanab Steam Hydrogasification Pilot Plant (see attachment), which is on land managed by the Utah School and Institutional Trust Lands Administration (SITLA), requires compliance with 36 CFR Part 800.4(d)(1). Viresco Energy, LLC contracted Bighorn Archaeological Consultants, LLC to assist SITLA in fulfilling requirements under various federal and state environmental protection laws, including the National Historic Preservation Act (NHPA), the National Environmental Policy Act (NEPA), and the Utah Antiquities Act, and to perform an inventory of the proposed area of potential effect.

In September 2010 Bighorn conducted the inventory under Utah Project Authorization Number U10-O-0690s, and recorded two archaeological sites, 42KA6967 (a newly recorded open lithic scatter) and 42KA5613 (a previously recorded historic trash scatter). Bighorn prepared a report titled "*A Cultural Resource Inventory of the Proposed Kanab Steam Hydrogasification Pilot Plant, Kane County, Utah*" (Report Number 10-53) in which they considered both sites to be not eligible to the National Register of Historic Places. In late 2010 the report was submitted by Lisa Beck at SITLA to the Utah Department of Community and Culture State Historic Preservation Office (SHPO) as per the SHPO-SITLA cultural resources consultation Programmatic Agreement (SHPO Case No. 11-0075). As no eligible properties were located during the inventory, the SHPO did not provide a concurrence letter within 30 days, but per the Programmatic Agreement their concurrence was assumed by Lisa Beck at SITLA.

Because the U.S. Department of Energy (DOE) is considering an action to provide federal financial assistance to Viresco's project, DOE also has a responsibility to comply with NHPA and NEPA. Based on DOE's analysis of the report completed by Bighorn and events documented in this letter, DOE has determined that the proposed project will result in no historic properties affected. In compliance with 36 CFR Part 800.4(d)(1), the DOE asks the SHPO for its formal concurrence on this finding.

Sincerely,

A handwritten signature in cursive script that reads "Joseph Zambelli".

Joseph Zambelli
 NEPA Document Manager

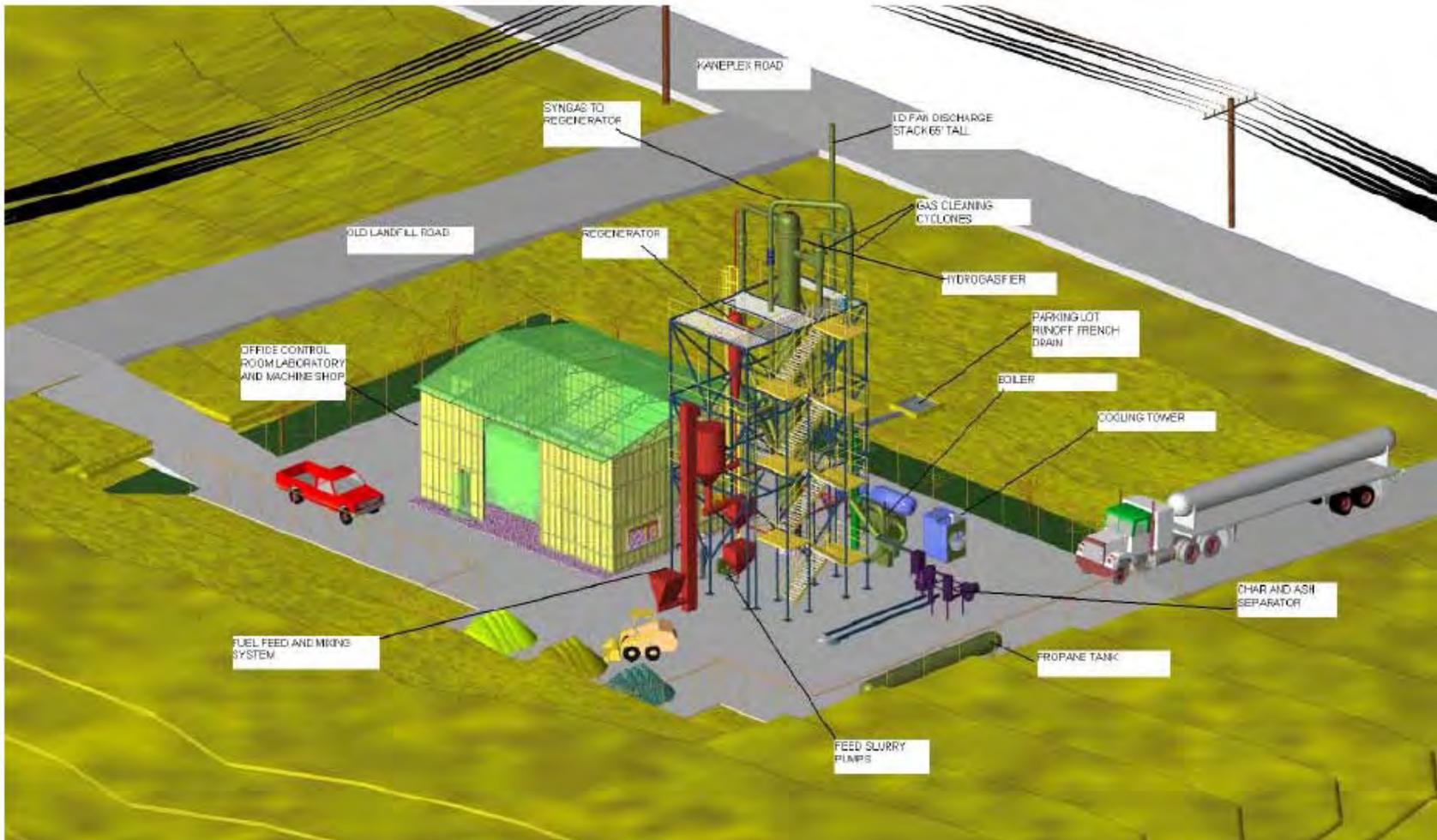
Enclosure

ATTACHMENT -- Project Description:

The project would be located at: Sec 10, T44S, R6W, Salt Lake base and meridian, SW4NW4NW4, Section 10, Kane County, Utah (see the attached Site Location Map). This land is managed by Utah's School & Institutional Trust Lands Administration. A conceptual drawing of Viresco's proposed project is also attached.

Viresco's project involves the design, construction, and testing of a pilot-scale steam hydrogasification facility to evaluate the enhanced conversion of carbonaceous material in a high-steam environment. During operation the pilot-scale hydrogasification process would convert carbonaceous feedstocks such as coal, and vegetative biomass, into synthesis gas suitable for further processing to liquid fuel or to substitute natural gas. The concept for the pilot plant involves a fluid bed gasifier fluidized by steam and recycled hydrogen with sand as the primary bed material and a heat carrier connected by a standpipe and return line to a fluid bed regenerator (combustor) that heats the sand using char carbon and air. The pilot-scale gasifier to be constructed and operated in this project would have a feedstock throughput of up to 5 tons-per-day when operating.

Field site preparation activities contracted by Viresco would include minor excavation on 0.75 acres with a slope of 10 percent, utility trenching and installation of a concrete slab measuring 40 feet by 45 feet. Viresco would then construct a building on the slab. Exterior production structures and machinery would occupy an additional 5,000 square feet. Maximum height of structures would be 67 feet. Stockpiles of sand, coal and biomass material would be stored onsite.



Conceptual View of Pilot Plant Looking Northwest



State of Utah

GARY R. HERBERT
Governor

GREG BELL
Lieutenant Governor

Department of Community and Culture

MICHAEL HANSEN
Acting Executive Director

State History

WILSON G. MARTIN
Acting Director

May 25, 2011

Joseph Zambelli
NEPA Document Manager
National Energy Technology Laboratory
3610 Collins Ferry Road
P.O. Box 880
Morgantown WV 26507

RE: Kanab Steam Hydrogasification Pilot Plant

In reply please refer to Case No. 11-0075

Dear Mr. Zambelli:

The Utah State Historic Preservation Office received your report on May 16, 2011. We have not yet received a request for review of this undertaking from a federal agency. Per 800 Regulations, DOE should submit a Section 106 request for consultation. As you indicated, SITLA sent the report as part of their responsibility per a Streamlining PA with Trust Lands. Our office acknowledged the submittal on January 25th and no further comment was required, our office finding no objections to the submittal.

This does not constitute formal consultation under §36CFR800.4 or U.A.C. 9-8-404. If you have questions, please contact me at 801-533-3555 or Jim Dykmann at 801-533-3523.

Sincerely,

Lori Hunsaker
Deputy State Historic Preservation Officer
Archaeology



UTAH STATE HISTORICAL SOCIETY
ANTIQUITIES
HISTORIC PRESERVATION
RESEARCH CENTER & COLLECTIONS

UT SHPO

Joseph Zambelli - 11-0075

From: "Lori Hunsaker" <lhunsaker@utah.gov>
To: <joseph.zambelli@netl.doe.gov>
Date: 6/8/2011 12:35 PM
Subject: 11-0075
CC: "Lori Hunsaker" <lhunsaker@utah.gov>

Mr. Zambelli,

Apologies for our oversight on the above referenced case. We did not understand that NETL was a Federal Agency.

As per 36CFR800 we concur with your determination of No Historic Properties Effected.

If you have any questions, please do not hesitate to contact me.

Best,

Lori Hunsaker
Deputy State Historic Preservation Officer- Archaeology
Division of State History
300 Rio Grande Street
Salt Lake City, Utah 84101-1182
(801) 533-3555

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APPENDIX A2

Correspondence with Native American Tribes

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Staff-to-Staff Consultation Letters were sent to the following Native American Tribes on May 6, 2011 (the letter to the Kaibab Paiute Tribal Council is provided as a representative example):

Chemehuevi Indian Tribe of the Chemehuevi Reservation, California	Las Vegas Tribe
Colorado River Indian Tribe	Moapa Tribe
Fort McDowell Yavapai Tribe	Navajo Nation
Fort Mojave Indian Tribe	Paiute Indian Tribe of Utah
Havasupai Tribe	San Carlos Apache Tribe
Hopi Tribe of Arizona	San Juan Southern Paiute Tribe of Arizona
Hualapai Tribe	White Mountain Apache Tribe
Kaibab Band of Paiute Indians	Yavapai-Apache Tribe



May 6, 2011

Carmen Bradley, Chairperson
Kaibab Paiute Tribal Council
HC65, Box 2
Tribal Affairs Building
Fredonia, AZ 86022

Dear Ms. Bradley:

The U.S. Department of Energy (DOE) is considering a proposed action to provide financial assistance to Viresco Energy, LLC to support Viresco's construction and operation of a Coal and Biomass Fueled Pilot Plant in Kanab, Utah. The project would be located at: Sec 10, T44S, R6W, Salt Lake base and meridian, SW4NW4NW4, Section 10, Kane County, Utah (see the attached Site Location Map). This land is managed by Utah's School & Institutional Trust Lands Administration. A description and drawing of Viresco's proposed project are attached.

As the lead federal agency, DOE must comply with Sections 106 and 110 of the National Historic Preservation Act (NHPA) for this undertaking, as well as with the National Environmental Policy Act (NEPA) and the Endangered Species Act. Therefore, this letter is intended to initiate consultation with your tribal government under NHPA and NEPA. Based on a review of the currently available information, DOE concluded that the appropriate level of analysis for its proposed action and Viresco's proposed project would be an environmental assessment.

I would like to request any comments from your government regarding the potential significance of, and potential effects to, any traditional cultural properties, cultural landscapes, or archaeological sites that may be affected by the proposed project. DOE will hold a public scoping meeting to obtain the views of tribes, governmental agencies, private organizations, and the public regarding its proposed action and the scope of the environmental assessment. You are cordially invited to attend this meeting:

Date: May 18, 2011
Time: Open House: 5:00 to 7:00 pm
Formal Presentation: 7:00pm
Location: Kanab Middle School Cafeteria
690 S. Cowboy Way

Individuals wishing to present oral comments may either register at the meeting or register in advance by notifying DOE via phone (304.285.4913) or email (Joseph.Zambelli@NETL.DOE.GOV). You may also provide written comments by sending an email or letter to Mr. Joseph Zambelli, NEPA Document Manager, DOE-NETL, M/S:B07, 3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507-0880. The public comment period will end June 17, 2011.

I would be pleased to discuss the project and the environmental assessment with you. Please do not hesitate to call or email me if you have further questions. Your participation in this ongoing consultation process will be facilitated if we receive a written response on behalf of your tribe.

Thank you for your participation in this important process.

Sincerely,

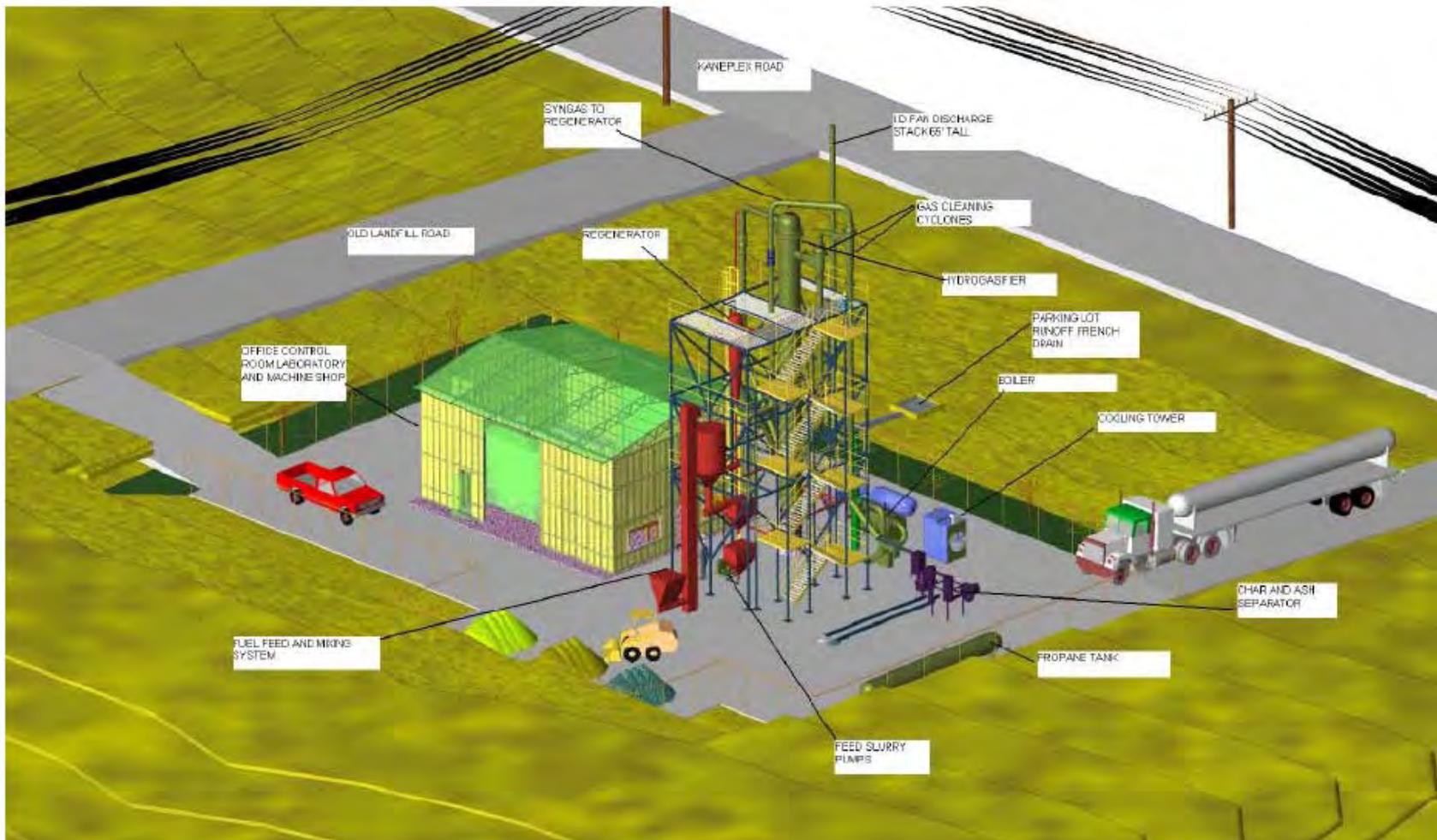
Joseph Zambelli
NEPA Document Manager

Enclosures

ATTACHMENT -- Project Description:

Viresco's project involves the design, construction, and testing of a pilot-scale steam hydrogasification facility to evaluate the enhanced conversion of carbonaceous material in a high-steam environment. During operation the pilot-scale hydrogasification process would convert carbonaceous feedstocks such as coal, and vegetative biomass, into synthesis gas suitable for further processing to liquid fuel or to substitute natural gas. The concept for the pilot plant involves a fluid bed gasifier fluidized by steam and recycled hydrogen with sand as the primary bed material and a heat carrier connected by a standpipe and return line to a fluid bed regenerator (combustor) that heats the sand using char carbon and air. The pilot-scale gasifier to be constructed and operated in this project would have a feedstock throughput of up to 5 tons-per-day when operating.

Field site preparation activities contracted by Viresco would include minor excavation on 0.75 acres with a slope of 10 percent, utility trenching and installation of a concrete slab measuring 40 feet by 45 feet. Viresco would then construct a building on the slab. Exterior production structures and machinery would occupy on an additional 5,000 square feet. Maximum height of structures would be 67 feet. Stockpiles of sand, coal and biomass material would be stored onsite.



Conceptual View of Pilot Plant Looking Northwest



LeRoy N. Shingoitewa
CHAIRMAN

Herman G. Honanie
VICE-CHAIRMAN

May 16, 2011

Joseph Zambelli, NEPA Document Manager, DOE-NETL, M/S:B07
Department of Energy, National Energy Technology Laboratory
3610 Collis Ferry Road, P.O. Box 880
Morgantown, West Virginia 26507

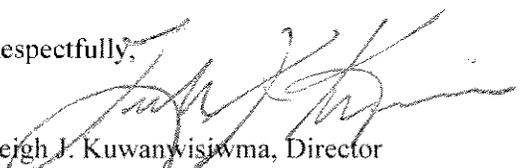
Dear Mr. Zambelli,

This letter is in response to your correspondence dated May 6, 2011, regarding the Department of Energy proposing to provide federal financial assistance to Viresco Energy, LLC for construction and operation of a coal and biomass fueled pilot plant in Kanab. The Hopi Tribe claims cultural affiliation to prehistoric cultural groups in Utah. The Hopi Cultural Preservation Office supports the identification and avoidance of prehistoric archaeological sites, and we consider the prehistoric archaeological sites of our ancestors to be "footprints" and Traditional Cultural Properties. Therefore, we appreciate your solicitation of our input and your efforts to address our concerns.

And therefore, the Hopi Cultural Preservation Office is interested in consulting on any proposal in Utah that has the potential to adversely affect prehistoric sites. Because this is a federally funded project that involves ground disturbing activities, to assist us in determining if this proposal may affect cultural resources significant to the Hopi Tribe, please provide us with a copy of the cultural resources survey report of the area of potential effect for review and comment.

In addition, if prehistoric cultural resources are identified that will be adversely affected by project activities, we will request ongoing consulting on any proposed treatment plans. For your information and future correspondences, LeRoy N. Shingoitewa is now Chairman of the Hopi Tribe. If you have any questions or need additional information, please contact Terry Morgart at 928-734-3619 or tmorgart@hopi.nsn. Thank you for your consideration.

Respectfully,



Leigh J. Kuwanyisiwma, Director
Hopi Cultural Preservation Office

xc: Utah State Historic Preservation Office



May 25, 2011

Leigh J. Kuwanwisiwma
Director
Hopi Cultural Preservation Office
The Hopi Tribe
P. O. Box 123
Kykotsmovi, AZ 86039

RE: Proposal for providing financial assistance to Viresco Energy, LLC for its proposed coal and biomass fueled project in Kanab, Utah.

Dear Mr. Kuwanwisiwma,

Thank you for your reply regarding the U.S. Department of Energy's proposal to provide financial assistance to Viresco Energy, LLC for its proposed coal and biomass fueled project in Kanab, Utah. Per your request, please find attached a copy of the Bighorn Archaeological Consultants, LLC cultural resource inventory report for the proposed site.

If you have any questions on this or any other item related to the proposed project, please do not hesitate to let me know via phone at 304.285.4913 or by email at joseph.zambelli@netl.doe.gov.

Sincerely,

A handwritten signature in black ink that reads "Joseph Zambelli".

Joseph Zambelli
NEPA Document Manager

Attachment



LeRoy N. Shingoitewa
CHAIRMAN

Herman G. Honanie
VICE-CHAIRMAN

June 6, 2011

Joseph Zambelli, NEPA Document Manager, DOE-NETL, M/S:B07
Department of Energy, National Energy Technology Laboratory
3610 Collis Ferry Road, P.O. Box 880
Morgantown, West Virginia 26507

Dear Mr. Zambelli,

Thank you for your correspondence dated May 25, 2011, with an enclosed cultural resources survey report, in response to our May 16, 2011 letter regarding the Department of Energy proposing to provide federal financial assistance to Viresco Energy, LLC for construction and operation of a coal and biomass fueled pilot plant in Kanab on State of Utah, School and Institutional Trust Lands. The Hopi Tribe claims cultural affiliation to prehistoric cultural groups in Utah. The Hopi Cultural Preservation Office supports the identification and avoidance of prehistoric archaeological sites, and we consider the prehistoric archaeological sites of our ancestors to be "footprints" and Traditional Cultural Properties. Therefore, we appreciate your continuing solicitation of our input and your efforts to address our concerns.

As we stated in our May 16, 2011 letter, the Hopi Cultural Preservation Office is interested in consulting on any proposal in Utah that has the potential to adversely affect prehistoric sites. We are aware of numerous prehistoric sites in the Kanab and Jackson Flat area.

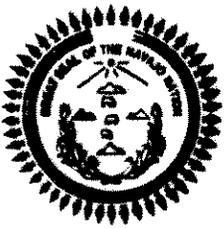
We have now reviewed the enclosed cultural resources survey report of the 10 acre area of potential effect that identifies a site described as an open lithic scatter, which is recommended as ineligible for listing on the National Register. Therefore, we have determined that this proposal is unlikely to affect cultural resources significant to the Hopi Tribe.

However, we concur with the recommendation that if any cultural features or deposits are encountered during project activities, the State Historic Preservation Office must be consulted to evaluate their nature and significance. If any Native American human remains or funerary objects are discovered during construction they shall be immediately reported as required by law. If you have any questions or need additional information, please contact Terry Morgart at 928-734-3619 or tmorgart@hopi.nsn. Thank you for your consideration.

Respectfully,

Leigh J. Kuwanwisiwma, Director
Hopi Cultural Preservation Office

xc: Utah State Historic Preservation Office



THE NAVAJO NATION

BEN SHELLY
PRESIDENT

REX LEE JIM
VICE-PRESIDENT

July 5, 2010

Joseph Zambelli
NEPA Document Manager
National Energy Technology Laboratory
3610 Collins Ferry Road
PO Box 880
Morgantown, WV 26507

Dear Mr. Zambelli:

Our apology for an oversight and missing the deadline date of your request, and that the Navajo Nation Historic Preservation Department – Traditional Culture Program (NNHPD-TCP) is in receipt of the proposed project where Viresco Energy, LLC is proposing to construct and operate a Coal and Biomass Fueled Pilot Plant in Kanab, Utah.

After reviewing your consultation documents, NNHPD-TCP has concluded the proposed undertaking/project area **will not impact** Navajo traditional cultural resources. The NNHPD-TCP, on behalf of the Navajo Nation has no concerns at this time.

However, the determination made by the NNHPD-TCP does not necessarily mean that the Navajo Nation has no interest or concerns with the proposed project. If the proposed project inadvertently discovers habitation sites, plant gathering areas, human remains and objects of cultural patrimony the NNHPD-TCP request that we be notified respectively in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA).

The NNHPD-TCP appreciates your consultation efforts, pursuant to 36 CFR Pt. 800.1 (c)(2)(iii). Should you have any additional concerns and/or questions, do not hesitate to contact me electronically at tony@navajohistoricpreservation.org or telephone at 928-871-7750.

Sincerely,

Tony H. Joe, Jr., Supervisory Anthropologist (*Section 106 Consultations*)
Historic Preservation Department – Traditional Culture Program

TCP 11-241
CC: Office File/Chrono



Please consider the environment before printing this e-mail.

From: Joseph Zambelli [mailto:Joseph.Zambelli@NETL.DOE.GOV]
Sent: Tuesday, February 01, 2011 12:00 PM
To: Leann
Cc: Elaine Everitt; John Ganz; Joseph Zambelli
Subject: RE: Viresco Energy

Hi LeAnn,

Thanks for your questions. DOE's NEPA regulations and policies can be found at <http://nepa.energy.gov/requirements.htm>. DOE consults with recognized tribes during its NEPA process. It requests that tribes provide information on properties of traditional religious and cultural significance in the vicinity of the proposed project, and on concerns they have about the project. We use this information to prepare our NEPA reviews and to meet our obligations under Section 106 of the National Historic Preservation Act and the Native American Graves Protection and Repatriation Act of 1990.

Any comments or concerns are included in the draft NEPA document, which is made available for public comment. All entities with which DOE has consulted, as well as any other agencies, groups or persons that may have an interest in the project, receive a copy of the draft document, which is also provided to local public libraries and posted on the following DOE web site:

<http://www.netl.doe.gov/publications/others/nepa/index.html>

DOE has not decided the level of NEPA review that will be required for this grant, but it is likely that an Environmental Assessment will be necessary.

In the context of a grant of financial assistance, DOE does not release funds to the recipient for activities that could limit the range of reasonable alternatives or have an adverse impact on the environment until the NEPA process is complete and DOE decides whether to provide financial assistance to the recipient's proposed project. Since I do not work with the grant and funding aspects of the project, you may want to contact the project manager, Elaine Everitt, at elaine.everitt@netl.doe.gov, for additional information. Keep in mind that DOE's participation in this project is limited to deciding whether to provide financial assistance. It would not be involved in the construction or operation of the facility, although these activities would be analyzed in the NEPA document.

If you have any other questions or need additional information, please let me know.

Thanks

Joe Zambelli

NEPA Document Manager

DOE-NETL

3610 Collins Ferry Road
P.O. Box 880
Morgantown, WV 26507-0880

Phone: 304.285.4913

Email: joseph.zambelli@netl.doe.gov

>>> Leann <kptenv@scinternet.net> 1/31/2011 2:35 PM >>>

Hi Joe;

I haven't worked with DOE before (we usually deal with BLM, USFS, NPS and FERC); can you provide me with a copy of your Tribal consultation and NEPA policies? Plus, can you tell me how the DOE grant process, which apparently Viresco secured, works – in particular, is the grant contingent on the results of the NEPA process?

Thanks!

LeAnn Skrzynski,

Environmental Program Director
Kaibab Band of Paiute Indians



Joseph Zambelli - RE: Viresco Energy

From: Leann <kptenv@scinternet.net>
To: Joseph.Zambelli@NETL.DOE.GOV
Date: 2/8/2011 4:05 PM
Subject: RE: Viresco Energy
CC: msavala@kaibabpaiute-nsn.gov; John.Ganz@NETL.DOE.GOV;
Elaine.Everitt@NETL.DOE.GOV

Mr. Zambelli, et al;

I appreciate the recognition that we must be consulted with under the NHPA and NAGPRA regarding cultural concerns. However, as a Federal agency DOE also has a Trust responsibility to involve us in this process under a government-to-government relationship above and beyond cultural or religious discussion. I feel as though we are already behind the ball because the project has reached the local Planning & Zoning Commission in Kanab without any notification from DOE to us of the project, and it appears as though any interaction with DOE may never have occurred had I not initiated the process.

To provide a little background about how NEPA, NHPA & NAGPRA have been botched in the very same location to this day as it concerns our Tribe, SITLA-leased lands and Viresco's advocate, Mike Noel, please review last night's Salt Lake news report:

<http://www.ksl.com/?nid=148&sid=14297785>

I also ask that you read our statement that is listed on the link, as well. Unfortunately, the news channel compounded the issue by identifying the location of the remains (this, in an area renowned for grave desecration for EBay sales) and we are consulting our litigators.

This is the atmosphere in which the Viresco Energy project is taking place and this is why we warned Utah Representative Mr. Noel a month ago that despite his promises to the Tribes on change following Jackson Flat, we could see the Viresco Energy project is following the same trajectory, a train wreck in progress.

Our Tribal Council meets every 3rd Thursday of each month and would benefit from a presentation even at this point in the process, prior to consultation, provided an agenda request has been submitted by the Monday one week preceding the Council. If you can make the March Council date, please make arrangements through our Tribal Secretary, DeeAnn Multine at dmultine@kaibabpaiute-nsn.gov or 928-643-7245.

Thank you,

LeAnn Skrzyński,

Environmental Program Director
Kaibab Band of Paiute Indians



May 6, 2011

LeAnn Shrzynski, Environmental Program Director
Kaibab Band of Paiute Indians
HC65, Box 2
Fredonia, AZ 86022

Dear Ms. Shrzynski:

The U.S. Department of Energy (DOE) is considering a proposed action to provide financial assistance to Viresco Energy, LLC to support Viresco's construction and operation of a Coal and Biomass Fueled Pilot Plant in Kanab, Utah. The project would be located at: Sec 10, T44S, R6W, Salt Lake base and meridian, SW4NW4NW4, Section 10, Kane County, Utah (see the attached Site Location Map). This land is managed by Utah's School & Institutional Trust Lands Administration. A description and drawing of Viresco's proposed project are attached.

As the lead federal agency, DOE must comply with Sections 106 and 110 of the National Historic Preservation Act (NHPA) for this undertaking, as well as with the National Environmental Policy Act (NEPA) and the Endangered Species Act. Therefore, this letter is intended to initiate consultation with your tribal government under NHPA and NEPA. Based on a review of the currently available information, DOE concluded that the appropriate level of analysis for its proposed action and Viresco's proposed project would be an environmental assessment.

I would like to request any comments from your government regarding the potential significance of, and potential effects to, any traditional cultural properties, cultural landscapes, or archaeological sites that may be affected by the proposed project. DOE will hold a public scoping meeting to obtain the views of tribes, governmental agencies, private organizations, and the public regarding its proposed action and the scope of the environmental assessment. You are cordially invited to attend this meeting:

Date: May 18, 2011
Time: Open House: 5:00 to 7:00 pm
Formal Presentation: 7:00pm
Location: Kanab Middle School Cafeteria
690 S. Cowboy Way

Individuals wishing to present oral comments may either register at the meeting or register in advance by notifying DOE via phone (304.285.4913) or email (Joseph.Zambelli@NETL.DOE.GOV). You may also provide written comments by sending an email or letter to Mr. Joseph Zambelli, NEPA Document Manager, DOE-NETL, M/S:B07, 3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507-0880. The public comment period will end June 17, 2011.

I would be pleased to discuss the project and the environmental assessment with you. Please do not hesitate to call or email me if you have further questions. Your participation in this ongoing consultation process will be facilitated if we receive a written response on behalf of your tribe.

Thank you for your participation in this important process.

Sincerely,

Handwritten signature of Joseph Zambelli

Joseph Zambelli
NEPA Document Manager

Enclosures

ATTACHMENT -- Project Description:

Viresco's project involves the design, construction, and testing of a pilot-scale steam hydrogasification facility to evaluate the enhanced conversion of carbonaceous material in a high-steam environment. During operation the pilot-scale hydrogasification process would convert carbonaceous feedstocks such as coal, and vegetative biomass, into synthesis gas suitable for further processing to liquid fuel or to substitute natural gas. The concept for the pilot plant involves a fluid bed gasifier fluidized by steam and recycled hydrogen with sand as the primary bed material and a heat carrier connected by a standpipe and return line to a fluid bed regenerator (combustor) that heats the sand using char carbon and air. The pilot-scale gasifier to be constructed and operated in this project would have a feedstock throughput of up to 5 tons-per-day when operating.

Field site preparation activities contracted by Viresco would include minor excavation on 0.75 acres with a slope of 10 percent, utility trenching and installation of a concrete slab measuring 40 feet by 45 feet. Viresco would then construct a building on the slab. Exterior production structures and machinery would occupy on an additional 5,000 square feet. Maximum height of structures would be 67 feet. Stockpiles of sand, coal and biomass material would be stored onsite.



May 9, 2011

DeeAnn Multine, Tribal Secretary
Kaibab Band of Paiute Indians
Tribal Affairs Building
HC65, Box 2
Fredonia, AZ 86022

Dear Ms. Multine:

I have written to request that the following agenda item be added for the May 19th, 2011 Tribal Council Meeting to take place in Pipe Springs, Arizona:

- The U.S. Department of Energy (DOE) proposed action to provide financial assistance for construction and operation by Viresco Energy, LLC of a Coal and Biomass Fueled Pilot Plant in Kanab, Utah.

Depending on time available, DOE and Viresco would be pleased to make a brief (10- to 20-minute) presentation about Viresco's proposed project and the environmental assessment being prepared by DOE under the National Environmental Policy Act of 1969.

Attached is a brief project description, site location map, and conceptual drawing of Viresco's proposed project. Should you have any questions or feel additional materials for the meeting would be needed please do not hesitate to contact me via phone (304.285.4913), email (Joseph.Zambelli@NETL.DOE.GOV), or in writing by sending a letter to Mr. Joseph Zambelli, NEPA Document Manager, DOE-NETL, M/S:B07, 3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507-0880.

Thank you in advance for the opportunity of DOE to meet with the Kaibab Band of Paiute Indians on this subject.

Sincerely,

Joseph Zambelli, NEPA Document Manager

Cc: Manuel Savala, Tribal Chairman
msavala@kaibabpaiute-nsn.gov

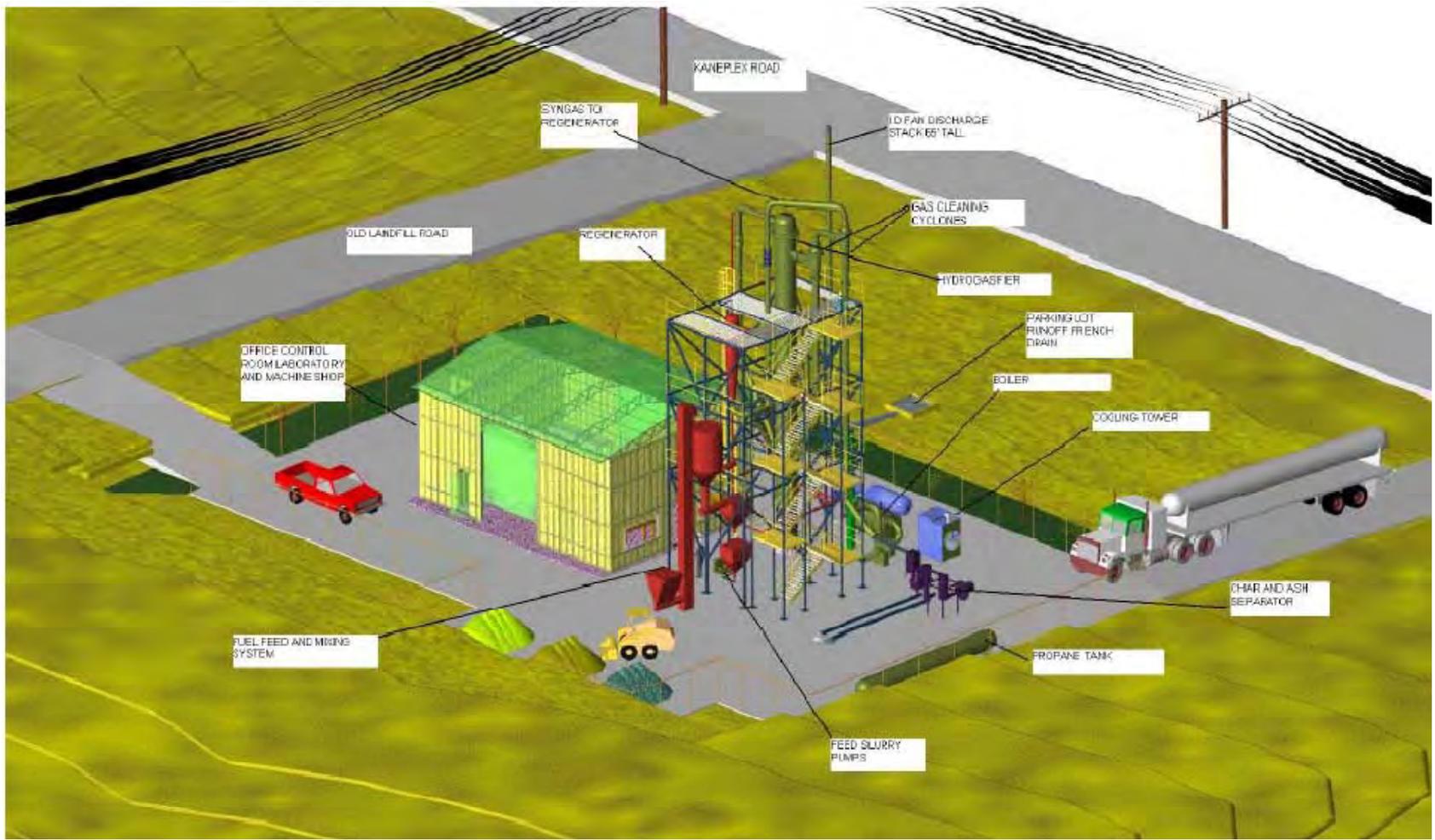
Enclosures

ATTACHMENT -- Project Description:

The project would be located at: Sec 10, T44S, R6W, Salt Lake base and meridian, SW4NW4NW4, Section 10, Kane County, Utah (see the attached Site Location Map). This land is managed by Utah's School & Institutional Trust Lands Administration. A conceptual drawing of Viresco's proposed project is also attached.

Viresco's project involves the design, construction, and testing of a pilot-scale steam hydrogasification facility to evaluate the enhanced conversion of carbonaceous material in a high-steam environment. During operation the pilot-scale hydrogasification process would convert carbonaceous feedstocks such as coal, and vegetative biomass, into synthesis gas suitable for further processing to liquid fuel or to substitute natural gas. The concept for the pilot plant involves a fluid bed gasifier fluidized by steam and recycled hydrogen with sand as the primary bed material and a heat carrier connected by a standpipe and return line to a fluid bed regenerator (combustor) that heats the sand using char carbon and air. The pilot-scale gasifier to be constructed and operated in this project would have a feedstock throughput of up to 5 tons-per-day when operating.

Field site preparation activities contracted by Viresco would include minor excavation on 0.75 acres with a slope of 10 percent, utility trenching and installation of a concrete slab measuring 40 feet by 45 feet. Viresco would then construct a building on the slab. Exterior production structures and machinery would occupy an additional 5,000 square feet. Maximum height of structures would be 67 feet. Stockpiles of sand, coal and biomass material would be stored onsite.



Conceptual View of Pilot Plant Looking Northwest

June 13, 2011

Mr. Anthony Cugini
Director
US DOE – National Energy Technology Laboratory

Mr. Joseph Zambelli
NEPA Document Manager
US DOE – National Energy Technology Laboratory
3610 Collins Ferry Road
PO Box 880
Morgantown, WV 26507-0880

Submitted via email to: joseph.zambelli@NETL.DOE.GOV ,
Albert.petrasek@hq.doe.gov , and Anthony.Cugini@NETL.DOE.GOV

Re: **Utah Coal and Biomass Fueled Pilot Plant EA**

Dear Mr. Cugini and Zambelli;

We are writing to you regarding our first round of scoping comments plus our concerns on the way recent meetings were conducted for the Viresco Energy's Coal & Biomass-fueled pilot plant environmental analysis which is being proposed for Kanab, Utah .

As you are well aware, our Tribe has been anxious about this project since word of it appeared in the Salt Lake Tribune last fall. Our Reservation is about a mile from the site and our citizens often live in Kanab. As we were in the midst of unresolved issues resulting from an adjacent project, the Jackson Flat Reservoir, we knew that this project was one to watch and have tracked it closely.

We understand that NETL may not be well-acquainted with Tribal considerations but we would like to make the following points:

1. To this day, we have not received contact from any DOE Tribal Liaison. This is a critical oversight which we thought would be given a high priority as it was brought to DOE's attention in the meeting with our Tribal Council on May 19.
2. In addition, at the same meeting we made it clear that our expectation was to engage in a government-to-government exchange with the DOE Technical Manager, Elaine Everitt, rather than the company's proponent. We would like to have an informative discussion with both of these personnel as soon as practicable.
3. As noted, we were not appreciative that the public meeting held in Kanab indicated that consultation with our Tribe was already under way, although only minimal staff-to-

staff discussion by email had occurred. According to the definition of consultation in the DOE Indian policy, this is not recognized as such until agreements have been reached as to what constitutes official consultation. No agreement has been initiated to date.

4. The scoping meeting in Kanab was insufficient, as the visual aids were too vague to be of substance. While scoping meetings are meant to elicit comments for the environmental analysis to consider, asking a community to formulate questions in a vacuum is not good practice and could be considered misleading. For example, the by-products listed were given as hydrogen sulfide, carbon dioxide and slag which clearly was too simplistic for these purposes.
5. At the Kanab meeting and the Tribal meeting, there was virtually no detail of this specific project given and only vague generalities about the coal gasification process were provided. For instance, nothing addressed the potential ramifications of using biomass fuel or identified the actual biomass fuels that Viresco is proposing to use, where they plan to obtain them and how the waste from the process will be handled.

We are well-acquainted with the NEPA process as we work with many Federal agencies on a daily basis, including the Departments of the Interior, Agriculture, Housing and Urban Development, Defense and even DOE (FERC). We understand that all Federal agencies have their own policies which interpret NEPA but we are not being accorded the benefit of DOE's own consultation policy nor the recognition of Tribal sovereignty.

The presentations and materials provided were so cursory as to be meaningless. We ask that DOE return to our Tribal government and community with a well-developed scoping presentation, including the Tribal liaison, the DOE technical expert and a willingness to begin formal consultation.

Until such time as a new scoping meeting and government consultation can take place and to make sure no mistake is made in making deadlines within the current scoping process, we submit the following comments to be considered:

By funding this action, DOE is facilitating a project that has direct implications for our Tribe. We ask that a full Environmental Impact Statement be used to best characterize the cumulative effect this project may have on our Tribe and the region.

- Traditional religious practitioners of our Tribe indicate that the project site is a Sacred Site contiguous with the Jackson Flat reservoir area. As such, in addition to the typical assessment of cultural resources, we request that DOE prepare a Social Impact Assessment to include the relationship of our people with that environment and the project's cultural and social effects.

As DOE recognizes Tribal governments as sovereign entities with primary authority and responsibility for the protection of the health, safety and welfare of their citizens plus the right of each Indian nation to protect its natural and cultural resources, we have many concerns above and beyond the cultural ones typically associated with Tribes.

- What is the source and composition of each feedstock ?
- How will each potential feedstock be stored prior to its use and how much fugitive dust will result (from storage plus milling/grinding and any other processing of feedstocks)?
- Will the carbon dioxide produced be released or sequestered, and if plans are to sequester it, where would that occur? We ask that a different location be considered, where carbon dioxide capture and storage could be included in the demonstration.
- The funds that have been earmarked for this experimental process could be better used to increase efficiency or further the development of renewable technology; we would like a comparison of these processes made as an alternative for study in an EIS, particularly as the state of technology indicates the sequestration inherently necessary for coal gasification production to be considered a “clean technology” is not viable
- We ask for a complete analysis of the liquid aspects of this project, including an identification of all water or liquids, where and in what quantity they will be obtained, how it will be used in the process, any changes (chemical, electrical , thermal, etc.) that will occur, how it will be processed or treated and what triggers each of those processes before it is released, all potential releases to the environment, and a plan for remediation of all resulting liquids/water that may enter the water table, municipal water treatment, surface or ground water systems from all potential feedstocks or commingled feedstocks, and how these releases can affect wildlife, air & water quality, riparian ecosystems, and human health.

Note: Human health impacts need to quantify mortality and morbidity plus sub-lethal health threats such as heart and lung disease, bronchitis and asthma, with the limitations of rural health-care, on a population already compromised by the physiological effects of high elevation.

- Identification of all compounds, toxic or hazardous materials, and radioactive elements used for, released and/or generated by the process, and how these can affect wildlife, riparian ecosystems, air & water quality, and human health.
- Please model all impacts (including health and economic) resulting from weather inversions and frequency of plume blight, and how these can affect wildlife, riparian ecosystems, and air & water quality.
- Please perform a Greenhouse Gas emission analysis including all fuels used during initiation of the gasification process and the cumulative transport of feedstocks and wastes.
- A study of odor impacts associated with the processing, and gasification, of each of the feedstocks or commingled feedstocks and how these can affect wildlife, riparian ecosystems, air & water quality, and human health.
- A study of noise impacts associated with the processing, and gasification, of each of the feedstocks or commingled feedstocks and how these can affect wildlife, riparian ecosystems, air & water quality, and human health.
- We request a scenic resource impact analysis that will take into consideration the impacts from exterior lighting, opacity effects from emissions, light pollution in a community intent on Dark Sky qualities, regional haze effects on visibility, windrose assessment to determine wind patterns over a given year, and the height of stacks and other structures in a highly visible area with a tourism-based economy and how these can affect wildlife, riparian ecosystems, air & water quality, and human health.
- Please provide a clear analysis of the triggers for further regulation and the regulatory agencies responsible for oversight on all emissions, residuals or wastes resulting from all potential feedstocks or commingled feedstocks and their effects on the environment.
- DOE should perform a comparison that would evaluate the impacts on this greenfield site as compared to a brownfield site in an urban area
- We request preparation of adequate emergency response plans generated to handle all foreseeable emergencies

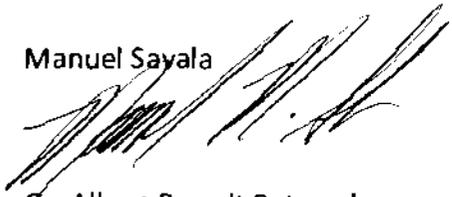
- We request that DOE stay the funding decision on this project until a Finding of No Significant Impact or Record of Decision is completed.

In closing, we ask that a full Environmental Impact Statement be used to best characterize the affect this project may have on our Tribe and the region. We wish to express our appreciation for your consideration in reviewing these comments and working with you once consultation is initiated.

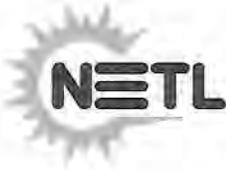
Please contact our Tribal Secretary to schedule a scoping meeting with our Tribal Council and a request for consultation.

Regards,

Manuel Sayala

A handwritten signature in black ink, appearing to be 'Manuel Sayala', written over a light blue horizontal line.

Cc: Albert Brandt Petrsek



August 1, 2011

Manuel Savala
Chairman of Tribal Council
Kaibab Band of Paiute Indians
Tribal Affairs Building
HC65, Box 2
Fredonia, AZ 86022

Re: Department of Energy Presentation at Public Scoping Meeting for the Utah Coal and Biomass Fueled Pilot Project on May 18, 2011

Dear Chairman Savala,

I understand that your Tribal Council has objected to statements that Department of Energy (DOE) representatives made to the citizens of Kanab during the May 18th scoping meeting regarding the status of DOE consultations with the Kaibab Band of the Paiute Indians. We regret that these statements implied that DOE had initiated formal government-to-government consultation with your tribe prior to that public meeting. We should have made it clear that only staff-to-staff level contact had occurred. In most cases, our interaction with tribal governments during our National Environmental Policy Act (NEPA) review has occurred at the staff-to-staff level and a formal government-to-government consultation has not been requested. In this case, however, please be assured that we understand the importance of your tribal government's request for formal government-to-government consultation and that we understand that this level of consultation has now been initiated with DOE participation in your tribal council meeting held on July 21, 2011.

We will ensure that DOE representatives correct any misunderstandings and present an accurate status of DOE's consultation efforts during the public meeting on the Draft Environmental Assessment for the Utah Coal and Biomass Fueled Pilot Project currently being planned for later this year.

Sincerely,

Richard A. Hargis, Jr.

Director

Environmental Compliance Division

e-mail cc: D. Conrad, DOE/HQ; E. Everitt, NETL; J. Zambelli, NETL

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APPENDIX B

Plants and Animals of Cultural Concern to the
Kaibab Band of Paiute Indians of Northern Arizona

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Paiute Plants

Tribal Name	Scientific Name	Common Name
NR	<i>Abutilon incanum</i>	Indian mallow
Uaahu	<i>Acacia greggii</i>	Catclaw acacia
Kaiva uusiv	<i>Agave utahensis</i> var. <i>kaibabensis</i>	Kaibab agave
Yaant	<i>Agave utahensis</i> var. <i>utahensis</i>	Utah agave
Ketsiav, Tempisangwavi, Tumpisangwav	<i>Ambrosia dumsoa</i>	White bursage
Sangwav	<i>Artemisia bigelovii</i>	Bigelow sagebrush
Chumav	<i>Artemisia filifolia</i>	Sand sagebursh
NR	<i>Astragalus praelongus</i>	Rattleweed, locoweed
NR	<i>Astragalus tephrodes</i>	
Sikumpe, tono	<i>Atriplex canescens</i>	Four-wing saltbrush
Kanave, Koauw kanav	<i>Baccharis salicifolia</i>	Seepwillow
Unapi, Unapyi op	<i>Battarea stevini</i>	Mushroom
Mausi	<i>Cercis occidentalis</i> var. <i>orbiculata</i>	California redbud
	<i>Chilopsis linearis</i>	Desert willow
Sikumpe	<i>Chrysothamnus nauseus</i>	Rubber rabbitbursh
Manavip	<i>Cirsium</i> sp.	Pink thistle
	<i>Clematis ligusticifolia</i>	Western virgin's bower, Wild clematis
Momop, mainowip, momonp	<i>Datura meteloides</i> (=D. <i>wrightii</i>)	Sacred datura, jimsonweed
Aku'u, ku'u	<i>Descurainia pinnata</i>	Yellow tansy mustard
Sakwapi	<i>Dyssodia pentachaeta</i> (D. <i>thurberi</i>)	Fetid marigold
Manav	<i>Echinocereus engelmannii</i>	Engelman hedgehog cactus
Chuamanav, i'mamanavi	<i>Echinocereus triglochidiatus</i>	Claretcup cactus
Sana'ich, Tuwich	<i>Encelia farinosa</i>	White brittlebush
Sana'ich, tuwich	<i>Encelia frutescens</i> var. <i>resinosa</i>	Brittlebush
Tup	<i>Ephedra nevadensis</i>	Nevada Indian tea
Yatup, tutup	<i>Ephedra torreyana</i>	Torrey Indian tea
	<i>Ephedra viridis</i>	Indian tea
Paxwav, Sakwa'ivi, Sakwa'ivip	<i>Equisetum laevigatum</i>	Smooth scouring rush
Muup	<i>Fallugia paradoxa</i>	Apache plume
Tase, Tash, Manav Avatu tash	<i>Ferocactus acanthodes</i>	California barrel cactus
Tuav	<i>Franxinus pennsylvanica</i>	Velvet ash
Yainup, waarump	<i>Gutierrezia microcephala</i>	Three-leaf snakeweed, Matchweed
Pauv	<i>Juncus acutus</i> var. <i>sphaerocarpus</i>	Spiny rush
Yatump	<i>Larrea tridentata</i>	Creosote bush, Greasewood
Pa'up, Pa'uv, U'up	<i>Lycium andersonii</i>	Wolfberry
U'up	<i>Lycium fremontii</i>	Fremont wolfberry
Paakwanav	<i>Mentha arvensis</i>	Field mint
Tukwivi, tuwkv, toxo'owatsiv	<i>Miravilis multiflora</i>	Colorado four-o'clock
Wichavi ma'ap	<i>Muhlenbergia asperifolia</i>	Scratch grass
Pamav, paenaxenar	<i>Nasturtium officinale</i>	Watercress
Ko'api, Nengweko'ap	<i>Nicotiana trigonophylla</i>	Desert tobacco
Ata wiisiv	<i>Nolina microcarpa</i>	Beargrass
Sixo'	<i>Oenothera pallida</i>	Pale evening primrose
Manav	<i>Opuntia basilaris</i>	Beavertail cactus
Yuavip	<i>Opuntia erinacea</i>	Grizzlybear cactus
Manav	<i>Opuntia phaeacantha</i>	Engelmann prickly pear

Tribal Name	Scientific Name	Common Name
Wa'iv	<i>Oryzopsis hymenoides</i>	Indian ricegrass
Patowanamauv	<i>Parthenocissus vitacea</i>	Virginia creeper
Pajama	<i>Phragmites australis</i>	Giant common reed
Soovip	<i>Populus fremontii</i>	Fremont cottonwood
Opimp, opimpe	<i>Prosopis glandulosa</i> var. <i>torreyana</i>	Torrey mesquite
Suuv	<i>Rhus trilobata</i> var. <i>simplicifolia</i>	Squaw bush
Su'uv, Shuuvi	<i>Rhus trilobata</i> var. <i>trilobata</i>	Squaw bush
Ku'u, nampitu	<i>Rumex hymenosepalus</i>	Wild rhubarb
Kanav	<i>Salix exigua</i>	Coyote willow
Paakanav	<i>Salix gooddingii</i>	Goodding willow
Manavip, manav	<i>Salsola iberica</i>	Russian thistle, thumbleweed
Nengweko'ap	<i>Salvia davidsonii</i>	Davidson sage
Kanareko'ap	<i>Salvia dorrii</i>	Purple sage, desert sage
Manav	<i>Sclerocactus parviflorus</i>	Pineapple cactus, Devil's claw
Mamuiv	<i>Sonchus oleraceus</i>	Common sow-thistle
Kupinav, Tupwiv	<i>Sphaeralcea ambigua</i>	Desert globemallow
Temar, Chemar	<i>Stanleya pinnata</i>	Prince's plume, Indian spinach
Tuwisanakup	<i>Stephanomeria tenuifolia</i>	Wire lettuce
Pa'ante maav	<i>Tamarix chinensis</i>	Tamarisk, salt cedar
NR	<i>Tessaria sericea</i>	Arrowweed
Kaiva sixwana	<i>Thamnosma montana</i>	Turpentine broom
Pa'ante sawap, pantusahwaw,to'ovi,tonov Iyaavi, pukwupe, kuripsup, we'ump	<i>Typha latifolia</i>	Broad-leaf cattail
Uusiv, wiisiv	<i>Vitis arizonica</i>	Canyon grape
Tachempi, Uusiv, Wiisiv	<i>Yucca angustissima</i>	Narrowleaf yucca
NR	<i>Yucca baccata</i>	Banana yucca
	<i>Yucca whipplei</i>	Whipple yucca

July 3, 2008

Animals of Cultural Concern to the Kaibab Band of Paiute Indians of Northern Arizona,
this list is not in any kind of order.

Mule Deer	Lizards
Rabbits, incl. cottontails	Gophers
Most small birds	owls
Chipmunks	Mourning Doves
Coyotes	Crickets
Fox	Grasshoppers
Badgers	Bighorn sheep
Squirrels (Flying and Non Flying)	Buffalo
Eagles	Woodpeckers
Mice/Rats	Antelope
Porcupine	Bobcats/Lynx
Bats	Mountain Lions
Crows/Ravens	Ducks
All Snakes (i.e. Rattle, Blow)	All Hawks
Condors	Prairie Dogs
Skunks	Fish
Raccoons	Frogs

Danny Bulletts, Jr.
Director of Fisheries, Wildlife & Parks
Kaibab Band of Paiute Indians
HC 65 Box 2
Fredonia, Arizona 86022

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APPENDIX C

Will-Serve Letters from Utility Suppliers

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Mayor
Nina Laycook
City Manager
Duane Huffman
Treasurer
RaeLene Johnson
City Attorney
Van Mackelprang



KANAB
— UTAH —

City Council
James G. Sorenson
Shaun Smith
Ed Meyer
Steven R. Mower
Anthony Chatterley

October 13, 2010

Subject: Can & will Serve Letter – 400 East Kaneplex Road (Viresco Energy Project)

To whom it may concern:

This Letter confirms that Kanab City can and will furnish water and sewer service to the above project contingent upon the placement of necessary infrastructure.

Please contact me with any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Duane Huffman', written in a cursive style.

Duane Huffman
City Manager

– A Western Classic –



Will Serve Letter

To: Viresco Energy LLC.
Attn: Jim Guthrie/Arun Raju
From: Rob Wolfley, Garkane Propane.
Date: 6/15/11
Re: Kanab Pilot Plant will serve letter.

Gentlemen,

Per your request we are pleased to provide you with a will serve letter in support of your proposed Kanab pilot plant operation.

Garkane Propane has a bulk facility located in Kanab and can store approximately 30,000 gallons of LP gas. We have the ability to supply you with all your propane requirements. We currently serve many local customers in the Kanab area and are please to offer our service you.

We appreciate the opportunity to serve your LP gas Needs.

Rob Wolfley
Garfield Area Manager.
435-735-4280
rwolfley@garkaneenergy.com

August 8, 2011

Arun SK Raju, Ph.D.,
Director of Research,
Viresco Energy, LLC,
1401 Research Park Dr., Suite 400,
Riverside, CA - 92507
E-mail: arun.raju@virescoenergy.com

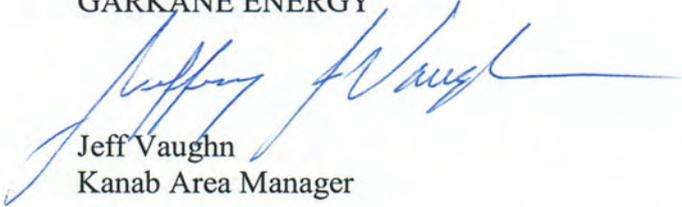
To Whom It May Concern:

With some improvements made to the electrical system, Garkane Energy has the means to provide 225kW of power for the electrical service needs for the "Synthetic Fuel Coal Gasification Research and Development Facility" project, located in the Kane Plex Industrial Center, 400 E. Kane Plex Drive. The electrical service is contingent on easements, necessary system improvements and a 3-phase 12.5kV power line constructed and ran to the site.

Should you have any questions, please let us know.

Sincerely,

GARKANE ENERGY

A handwritten signature in blue ink, appearing to read "Jeff Vaughn", is written over the typed name and title.

Jeff Vaughn
Kanab Area Manager

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APPENDIX D

Air Quality Documentation

Air Emissions Calculations (D1), Small Source Exemption Registration (D2),
Dispersion Model Screening for Criteria Pollutants (D3). Detailed Modeling Results (D4)

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APPENDIX D1

Air Emissions Calculations

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D.1 Air Emissions Calculations**Table D-1 Construction Equipment Use**

Equipment type	Number of units	Days on site	Hours per day	Operating hours
Graders Composite	1	60	7	420
Excavators Composite	1	60	7	420
Rubber Tired Dozers Composite	2	60	7	840
Off-Highway Trucks Composite	2	60	7	840
Air Compressors	1	90	7	630
Cement & Mortar Mixers	1	90	7	630
Cranes	1	60	7	420
Generator Sets	1	120	7	840
Tractors/Loaders/Backhoes	3	120	7	2520

Table D-2 Construction Equipment Emission Factors (lbs/hour)

Equipment	CO	NO _x	VOC	SO _x	PM ₁₀	PM _{2.5}
Graders Composite	0.6561	1.6191	0.1936	0.0015	0.0840	0.0840
Excavators Composite	0.5828	1.3249	0.1695	0.0013	0.0727	0.0727
Rubber Tired Dozers Composite	1.5961	3.2672	0.3644	0.0025	0.1409	0.1409
Off-Highway Trucks Composite	0.8499	2.7256	0.2730	0.0027	0.0989	0.0989
Air Compressors	0.3782	0.7980	0.1232	0.0007	0.0563	0.0563
Cement and Mortar Mixers	0.0447	0.0658	0.0113	0.0001	0.0044	0.0044
Cranes	0.6011	1.6100	0.1778	0.0014	0.0715	0.0715
Generator Sets	0.3461	0.6980	0.1075	0.0007	0.0430	0.0430
Tractors/Loaders/Backhoes	0.4063	0.7746	0.1204	0.0008	0.0599	0.0599

Source: CARB, 2007.

Table D-3 Construction Equipment Emissions (tpy)

Equipment	CO	NO _x	VOC	SO _x	PM ₁₀	PM _{2.5}
Graders Composite	0.1378	0.3400	0.0406	0.0003	0.0176	0.0176
Excavators Composite	0.1224	0.2782	0.0356	0.0003	0.0153	0.0153
Rubber Tired Dozers Composite	0.6703	1.3722	0.1530	0.0010	0.0592	0.0592
Off-Highway Trucks Composite	0.3569	1.1448	0.1146	0.0011	0.0415	0.0415
Air Compressors	0.1191	0.2514	0.0388	0.0002	0.0177	0.0177
Cranes	0.1262	0.3381	0.0373	0.0003	0.0150	0.0150
Generator Sets	0.1454	0.2932	0.0451	0.0003	0.0181	0.0181
Tractors/Loaders/Backhoes	0.5120	0.9759	0.1517	0.0010	0.0754	0.0754
Total Equipment Emissions	2.1902	4.9938	0.6169	0.0045	0.2599	0.2599

Table D-4 Delivery of Equipment and Supplies

Number of Deliveries	2						
Number of Trips	2						
Miles Per Trip	60						
Days of Construction	120						
Total Miles	28800						
Pollutant	CO	NO _x	VOC	SO _x	PM ₁₀	PM _{2.5}	CO ₂
Emission Factor (lbs/mile)	0.0219	0.0237	0.0030	0.0000	0.0009	0.0007	0.0219
Total Emissions (lbs)	632.14	682.92	86.19	0.74	24.65	21.29	632.14
Total Emissions (tpy)	0.3161	0.3415	0.0431	0.0004	0.0123	0.0106	0.3161

Source: CARB, 2007.

Table D-5 Surface Disturbance						
TSP Emissions	80	lb/acre				
PM ₁₀ /TSP	0.45					
PM _{2.5} /PM ₁₀	0.15					
Period of Disturbance	30	days				
Capture Fraction	0.5					
Building/CHP Plant	Area (acres)	TSP (lbs)	PM ₁₀ (lbs)	PM ₁₀ (tons)	PM _{2.5} (lbs)	PM _{2.5} (tons)
Construction	0.1	240	108	0.05	8	0.001
Total	0.1	240	108	0.05	8	0.001

Sources: USEPA, 1995 and USEPA, 2005.

Table D-6 Worker Commutes							
Number of Workers	30						
Number of Trips	2						
Miles Per Trip	40						
Days of Construction	120						
Total Miles	288000						
Pollutant	CO	NO _x	VOC	SO _x	PM ₁₀	PM _{2.5}	CO ₂
Emission Factor (lbs/mile)	0.0105	0.0011	0.0011	0.0000	0.0001	0.0001	0.0105
Total Emissions (lbs)	3037.95	317.63	310.81	3.10	24.50	15.24	3037.95
Total Emissions (tpy)	1.5190	0.1588	0.1554	0.0015	0.0122	0.0076	1.5190

Source: CARB, 2007.

Table D-7 Total Construction Emissions (tpy)							
Activity/Source	CO	NO _x	VOC	SO _x	PM ₁₀	PM _{2.5}	
Construction Equipment	3.8142	8.8763	1.0617	0.0079	0.4396	0.4396	
Delivery of Equipment and Supplies	0.3161	0.3415	0.0431	0.0004	0.0123	0.0106	
Worker Commutes	1.5190	0.1588	0.1554	0.0015	0.0122	0.0076	
Total Construction Emissions	5.6493	9.3765	1.2602	0.0099	0.4642	0.4579	

Table D-8 Materials Used and Produced					
Inputs					
Coal	424	lb/hr dry		192.32	kg/hr
Water	1083	lb/hr		491.24	kg/hr
Natural gas	153	lb/hr		69.40	kg/hr
Sand	1	lb/hr		0.45	kg/hr
Outputs					
Wastewater	22	lb/hr		9.98	kg/hr
Solid waste	22	lb/hr		9.98	kg/hr
Air emissions					
SO ₂	3.2	lb/hr		1.45	kg/hr
NO	5	lb/hr		2.27	kg/hr
CO ₂	1485	lb/hr		673.6	kg/hr
CO	8.9	lb/hr		4.04	kg/hr

Table D-9 Projected Operational Emissions (tpy)				
Criteria Pollutant	Flare Exhaust	Regenerator Exhaust	Boiler	Total
SO ₂	1.16	-	--	1.16
CO	1.9	1.3	--	3.2
NO _x	1.7	0.1	0.04	1.84
PM ₁₀	0.01	0.01	--	0.02

Methodology Notes for Tables D-8 and D-9. Composition of the syngas product was calculated using the gasification reactor model in the VMG Sim process simulation program, which gasifies all coal components except for unconverted carbon in char, and the ash. Inputs to the model include

1. Coal composition, feed rate, feed temperature
2. Slurry water feed rate and temperature
3. Steam feed rate and temperature
4. Hydrogen feed rate and temperature
5. Nitrogen purge feed rate and temperature
6. Sand heat carrier feed rate and temperature
7. Carbon conversion

Gasifier operating pressure is also specified as an input. Nominal operating conditions are 850 deg C, 200 psig, 192.4 kg/hr coal rate, 1:1 slurry water to coal mass feed ratio, 1:1 steam to coal mass feed ratio, 1:1 H₂/Carbon in coal molar feed ratio. Nominal sand feed temperature was 1000 deg C based on regenerator operating temperature. Properties of a representative Utah bituminous coal were used for the coal composition, impurities, ash content and composition. 0.38 wt% S and 1.25 wt% N were assumed for the coal impurity contents. Carbon conversion in the gasifier was specified at 80%.

Gasifier syngas composition was calculated with the gasification reactor model assuming thermodynamic equilibrium with a -75 deg C temperature approach to equilibrium. Flare exhaust composition was calculated by burning the syngas product from the gasifier in air in a flare system. It was assumed that sufficient excess air was available to bring the flare exit temperature to about 1500 deg C or less to reduce NO_x emissions. Exit composition of the flare exhaust was calculated with VMG Sim equilibrium reactor model where thermodynamic equilibrium was assumed to be reached. However, NO content in the flare was calculated assuming 20% of the N in coal goes to NO in the flare¹, in addition to 0.133 lb NO_x per MMBtu of fuel input.² The mole fraction of NO in Table 3.5-3 was adjusted accordingly.

The compositions shown in Table 3.5-3 are representative of the nominal operating conditions, but may be adjusted by factors such as syngas cooling before the flare, which affects required excess air rate to meet flare temperature spec, and actual sulfur and nitrogen content of the coal. Some small corrections were found to table 3.5-3, as shown below. Corrections included H₂S and ammonia contents in the syngas to be consistent with the flare exhaust and the S and N contents in the coal.

Flare Emissions:

NO_x: NO_x is calculated based on assuming 20% of the Nitrogen content of the coal goes to NO_x after burning the syngas (gasifier product) in the flare, the rest goes to N₂. At 1.25 wt% N in coal, this contributes 3.5 lb/hr NO_x. In addition, it is assumed that the flare generates 0.133 lb NO_x/MMBtu of fuel content.³ For this estimate, the total fuel value in the flare is assumed to equal the heating value of the coal plus hydrogen feeds, or 8.1 MMBtu/hr, which results in additional 1.08 lb/hr NO_x. This calculation assumes 100% fuel efficiency from the gasifier. Actual fuel heating value in the flare would be less.

SO₂: SO₂ emissions are based on the entire S content of the coal feed at normal feed rates. SO₂ emissions from propane are assumed to be negligible in comparison. Coal rate = 424.1 lb/hr at 0.38 wt% S. SO₂ emissions = 3.2 lb/hr. It is assumed that all SO₂ emissions are from burning syngas in the flare. However, the total SO₂ emissions will be the same whether some of the SO₂ is emitted from the regenerator.

¹ Wikipedia, "NO_x," <http://en.wikipedia.org/wiki/NOx>, accessed 9/29/2011.

² S. Sterner, "Flare Study Phase I Report," Santa Barbara County Air Pollution Control District, July 1991, <http://www.sbcapcd.org/eng/dl/other/flarestudyphase1.pdf>, accessed 9/29/2011.

³ *Ibid.*

CO: Assumed 1% of the carbon in coal feed goes to CO when burned in the flare or regenerator, and 80% carbon conversion to syngas. Coal feed = 424.1 lb/hr at 68.85% Carbon. Results in 5.4 lb/hr CO from the flare.

CO₂: Assumed 99% of the carbon in coal feed goes to CO₂ when burned in the flare or regenerator, and 80% carbon conversion to syngas. Coal feed = 424.1 lb/hr at 68.85% Carbon. Results in 847 lb/hr CO₂ from the flare.

Regenerator Emissions:

SO₂: All SO₂ from coal is accounted for in the flare emissions.

NO_x: Regenerator NO_x is assumed to be small due to low operating temperature (1000 deg C). However, applying the emission factor for the flare (0.133 lb NO_x/MMBtu fuel input) to the propane fuel in the regenerator results in 0.3 lb/hr NO_x from 113.6 lb/hr of added propane at 22,182 Btu/lb, or 2.5 MMBtu/hr.

CO: Assumed 1% of the carbon feed to the regenerator goes to CO when burned, and 20% carbon in coal is unconverted and is burned in the regenerator. Coal feed = 424.1 lb/hr at 68.85% Carbon. Also, propane feed to the regenerator is 113.6 lb/hr (82% carbon). Results in total of 3.5 lb/hr CO from the regenerator.

CO₂: Assumed 99% of the carbon feed to the regenerator goes to CO₂ when burned, and 20% carbon in coal is unconverted and is burned in the regenerator. Coal feed = 424.1 lb/hr at 68.85% Carbon. Also, propane feed to the regenerator is 113.6 lb/hr (82% carbon). Results in a total of 548.0 lb/hr CO₂ from the regenerator.

PM₁₀: Assumed PM₁₀ = 0.1% of the ash. Ash product rate = 44.6 lb/hr, so PM₁₀ = 0.045 lb/hr

Boiler

Emissions:

Boiler usage is 31.5 lb/hr propane = 7.2 gal/hr. EPA AP-42 emissions factors were used to estimate boiler emissions.⁴

SO₂: assumed negligible

NO_x: Factor = 14 lb NO_x/1000 gal, results in 0.1 lb/hr NO_x.

CO: Factor = 1.9 lb CO/1000 gal, results in 0.01 lb/hr CO.

CO₂: Factor = 12,500 lb CO₂/1000 gal, results in 90 lb/hr CO₂.

PM₁₀: Factor = 0.4 lb PM₁₀/1000 gal, results in 0.003 lb/hr PM₁₀.

Notably, the regenerator vents directly to the atmosphere separately from the flared syngas product. SO₂ generated is based on the entire sulfur content of coal, and is assumed to result from burning the syngas in the flare. However, some SO₂ may be split to the regenerator, but the total SO₂ emissions will be the same. PM₁₀ = 0.045 lb/hr is based on assumed 0.1% of the ash content, which may be split between the regenerator and flare exhausts. Splits of NO_x, CO, and CO₂ between the flare and regenerator are discussed above.

⁴ EMISSION FACTOR DOCUMENTATION FOR AP-42 SECTION 1.5 LIQUEFIED PETROLEUM GAS COMBUSTION, <http://www.epa.gov/ttnchie1/ap42/ch01/bgdocs/b01s05.pdf>, accessed 9/29/2011.

APPENDIX D2

Small Source Exemption Registration

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State of Utah

GARY R. HERBERT
Governor

GREG BELL
Deputy Governor

Department of
Environmental Quality

Amanda Smith
Executive Director

DIVISION OF AIR QUALITY
Cheryl Heysing
Director

Small Source Registration

DAQE-EN0143320001-10

September 7, 2010

Harry Gatley
Viresco Energy
1451 Research Park Drive #200
Riverside, CA 92507

Dear Mr. Gatley:

Re: Request for Evaluation of Compliance with Rule R307-401-9, UAC: Exemptions and Special Provisions - Small Source Exemptions - De Minimis Emissions
Project Fee Code: N014332-0001

The Utah Department of Environmental Quality, Division of Air Quality (DAQ) has reviewed your letter, dated August 19, 2010, requesting a small source exemption for Viresco Energy: Hydrogasification Fluidized-Bed Pilot Facility located at: Sec 10, T44S, R6W, Salt Lake base and meridian, SW4NW4NW4, Section 10, Kane County, and determined that the small source exemption applies as long as the above-referenced equipment and associated processes are operated as specified in the Registration Request.

The small source exemption does not exempt a source from complying with other applicable federal, state, and local regulations including the current Utah Administrative Code. If you change your operation such that there is an increase in the emissions submitted to DAQ, it is recommended that you notify us as an Approval Order may be required.

The fee for issuing the small source/de minimis designation is the cost, as authorized by the Utah Legislature of the actual time spent by the Review Engineer and all other staff on the project, and a one-time filing fee. Payment should be sent to the DAQ upon receipt of the invoice.

195 North 1950 West • Salt Lake City, UT
Mailing Address: P.O. Box 144820 • Salt Lake City, UT 84114-4820
Telephone (801) 536-4000 • Fax (801) 536-4099 • T.D.D. (801) 536-4414
www.deq.utah.gov

Printed on 100% recycled paper

DAQE-EN0143320001-10

Page 2

Thank you for informing the DAQ of this process. If you have any additional questions, please contact Chad Harris at (801) 536-4069.

Sincerely,

M. Cheryl Heying, Executive Secretary
Utah Air Quality Board



Timothy R. Andrus, Manager
New Source Review Section

MCH:TRA:CDH:sa

Attachments: Small Source Exemption Registration Request and attached forms



Utah Division of Air Quality SMALL SOURCE EXEMPTION REGISTRATION

Revised: 6/21/06

Businesses eligible for this exemption shall not: 1) emit more than 5 tons per year of each of the following pollutants: sulfur dioxide (SO₂), carbon monoxide (CO), nitrogen oxides (NO_x), particulate matter (PM₁₀), ozone (O₃), or volatile organic compounds (VOCs) or 2) emit more than 500 pounds per year of any single hazardous air pollutant (HAP), and emit more than 2000 pounds per year for any combination of HAPs, or 3) emit less than 500 pounds per year of any air contaminant not listed in (1) or (2) above and less than 2000 pounds per year of any combination of air contaminants not listed in (1) or (2) above.

Please keep copies of the registration notice and worksheets on site at your business to verify your permit exemption status. Please be aware that the small source exemption only exempts your business from the permitting requirements of R307-401-5 through 8 of the Utah Administrative Code, not other applicable air quality regulations.

1. Business Name and Mailing Address: <u>VIRESCO ENERGY</u> <u>1451 RESEARCH PARK DR #200</u> <u>RIVERSIDE, CA 92507</u> <hr/> Phone # <u>(951) 784-7238</u> Fax # <u>(951) 784-7287</u>	2. Business Contact for Air Quality Issues: <u>HARRY GATLEY</u> <u>4876 DAMON CIRCLE</u> <u>HOLLaday, UT 84117</u> <u>1801 272-2411</u> <hr/> Phone # <u>(801) 243-5373</u> Fax # <u>(951) 784-7287</u>
3. Owners Name and Mailing Address: <u>VIRESCO ENERGY</u> <u>1451 RESEARCH PK. DR. #200</u> <u>RIVERSIDE, CA 92507</u> <hr/> Phone # <u>(951) 784-7238</u> Fax # <u>(951) 784-7287</u>	4. Business Location (street address if different from above and directions to site): <u>TOWNSHIP 44 SOUTH</u> <u>RANGE 6 WEST, SLBPM</u> <u>SW4NW+NW1, SECT 10</u>
5. County where business is located: <u>KANE COUNTY</u>	6. Start-up Date of Business: Month: _____ Year: <u>2011</u>
7. Briefly describe your process by describing end products, raw materials, and process equipment used at your business. Attach additional sheets if necessary. <u>HYDROGASIFICATION FLUIDIZED BED</u> <u>PILOT FACILITY RAW MAT - COAL, BIOMASS, LIMESTONE</u> <u>- NO PRODUCTS: EQUIPMENT: BOILER, GASIFIER,</u> <u>CONDENSER, H₂ SEPARATOR, GTL PROCESS MAT. MAINTENANCE</u> <u>PERMITS AVAILABLE ON REQUEST</u>	

AUG 19 2011
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

8. List any pollution control equipment: Low NO_x BURNER

9. Typical operating Schedule: 8h/day 5 days / week

10. Annual Emission Rates:
 Provide an estimate of the actual annual emissions of the following air contaminants from your business. Emission calculation worksheets are available for some common processes.
Please attach all worksheets and calculations.

Sulfur Dioxide (SO ₂).....	<u>0</u> lbs / year	Particulate Matter (PM ₁₀)	<u>0</u> lbs / year
Carbon Monoxide (CO)	<u>553</u> lbs / year	Ozone (O ₃)	<u>0</u> lbs / year
Nitrogen Oxides (NO _x)	<u>118</u> lbs / year	Volatile Organic Compounds (VOC)	<u>0</u> lbs / year
Other Air Contaminants	<u>0</u> lbs / year	Describe	<u>see Attached</u>

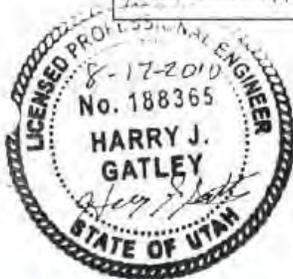
HAZARDOUS AIR POLLUTANTS: see Attached

Complete Attachment C before selecting one of the following emission estimate ranges.
 For an individual hazardous air pollutant:
 0 - 250 lbs/year: _____ 250-350 lbs/year: _____ 350-500 lbs/year: _____
 For a combination of hazardous air pollutants:
 0-1000 lbs/year: _____ 1000-1500 lbs/year: _____ 1500-2000 lbs/year: _____

11. By checking this box, I hereby certify that the information and data submitted in this notice fully describes this site and only this site and is true, accurate, and complete, based on reasonable inquiry and to the best of my knowledge. I recognize that falsification of the information and data submitted in this notice is a violation of R19-2-115, Utah Administrative Code.
- By checking this box, I understand that I am responsible for determining whether I remain eligible for this exemption before making operational or process changes in the future and agree to notify the Division of Air Quality when this business is no longer eligible for this exemption.

Signature of Owner/Manager: Harry J. Gately Title: CHIEF ENGINEER
 Print Name: HARRY J. GATLEY Phone #: (801)272-2911 Date: 8-17-2010

Division Reviewer: Clayton Date: 8/25/10
 Small Source Applicable Yes No



APPENDIX D3

Dispersion Model Screening for Criteria Pollutants

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Model Overview. The SCREEN3 model was used to calculate the impact of criteria pollutant emissions from the industrial flare for the proposed Viresco Coal Fueled Pilot Plant. This mathematical model simulates plume dispersion and estimates pollutant concentrations at receptor locations for the conservative assumptions and conditions used in the modeling analysis. The SCREEN3 model (EPA, 1995) was developed by EPA to provide an easy-to-use method of obtaining pollutant concentration estimates based on the document entitled “Screening Procedures for Estimating the Air Quality Impact of Stationary Sources” (EPA, 1995a). Most of the techniques used in the SCREEN3 model are based on assumptions and methods common to other EPA dispersion models.

SCREEN3 uses a Gaussian plume model that incorporates source-related factors and worst-case meteorological conditions to estimate pollutant concentrations from continuous sources. It is assumed that the pollutant does not undergo any chemical reactions, and that no other removal processes, such as wet or dry deposition, act on the plume during its transport from the source. SCREEN3 model results for simple terrain (terrain below stack top) are estimated maximum 1-hour concentrations. Performing a screening analysis in this manner yields a somewhat conservative first approximation of the source’s maximum impact. Typically, a screening analysis is initially performed to provide a conservative estimate of the air quality impacts. If screening modeling can demonstrate that the impacts from the project are acceptable, no further air quality analysis is typically required.

Meteorological conditions used in SCREEN3 include a full range of stability class/wind speed combinations. Receptors are assumed to be located directly downwind of the source. The model’s automated distance array option was employed so that the model’s iteration routine can locate the maximum concentration value over the range of downwind distances input to the model. In this case, distances from 1 to 1,000 m were used due to the relatively low emission rates.

Methodology and Model Inputs. Initial dispersion modeling was performed using the SCREEN3 dispersion model in the flat terrain mode with rural dispersion coefficients. This modeling is based on release of the air emissions through a single stack with an emission rate representing the maximum short-term (peak) emission rate of the flare. The full meteorology option was selected for each model run. The default ambient temperature of 68°F was used in the model along with the default anemometer height of 10m.

Below is a summary of flare emission rates for criteria pollutants primarily derived from the syngas processing and combustion, and AP-42 Compilation of Air Pollutant Emission Factors – Section 13.5 Industrial Flares. Table 1 summarizes the emission rates and stack parameters.

- **NO_x:** NO_x was calculated based on assuming 20% of the Nitrogen content of the coal goes to NO_x after burning the syngas (gasifier product) in the flare, the rest goes to N₂. At 1.25 wt% N in coal, this contributes 3.5 lb/hr NO_x. In addition, it was assumed that the flare generates 0.133 lb NO_x/MMBtu of fuel content. For this estimate, the total fuel value in the flare is assumed to equal the heating value of the coal plus hydrogen feeds, or 8.1 MMBtu/hr, which results in additional 1.08 lb/hr NO_x. This calculation assumes 100% fuel efficiency from the gasifier. Actual fuel heating value in the flare would be less. Net NO_x emissions rate = 0.58 g/s.
 - **SO₂:** SO₂ emissions are based on the entire S content of the coal feed at normal feed rates. SO₂ emissions from propane are assumed to be negligible in comparison. Coal rate = 424.1 lb/hr at 0.38 wt% S. SO₂ emissions = 3.2 lb/hr. It is assumed that all SO₂ emissions are from burning syngas in the flare. However, the total SO₂ emissions would be the same whether some of the SO₂ is emitted from the regenerator. Net SO₂ emissions rate = 0.40 g/s.
 - **CO:** Assumed 1% of the carbon in coal feed goes to CO when burned in the flare or regenerator, and 80% carbon conversion to syngas. Coal feed = 424.1 lb/hr at 68.85% Carbon. Results in 5.4 lb/hr CO from the flare from burning the syngas. This compares with 3.0 lb/hr of CO emissions calculated using the EPA AP42 Chapter 13.5 emissions factor of 0.37 lb CO/MMBtu. Using 5.4 lb/hr equates to 0.68 g/s.
 - **PM₁₀ and PM_{2.5}:** PM₁₀ was estimate as 0.1% of the ash from the coal. The amount was 0.0057 g/s. Although, the total emissions would be somewhat split regenerator, for purposes of dispersion modeling it was assumes 100% would be emitted from the flare. PM_{2.5} was estimated to be 10% of the PM₁₀ or 0.00057g/s.
-

Table 1. Dispersion Modeling Parameters

Source Parameter	Value
Stack Height	12.2m and 29.1 m
Stack Diameter	3 m
Exit Gas Flow Rate	12.6 m ³ /s
Exit Gas Temperature	1860 °K
NO ₂ Emission Rate	0.58 g/s
SO ₂ Emission Rate	0.40 g/s
CO Emission Rate	0.68 g/s
PM ₁₀ Emission Rate	0.0057 g/s
PM _{2.5} Emission Rate	0.00057 g/s

Results and Conclusions. The maximum predicted 1-hour ambient concentrations calculated by SCREEN3 for stack heights of both 40 and 67 feet (12.2 meters and 29.1 meters) were compared to the NAAQS to determine the level of impact (Table 2 and 3). Distance of Maximum Concentration for all criteria pollutants was 300 meters for a stack height of 40 feet and 425 meters for a stack height of 67 feet. Predicted concentrations are well below the NAAQS for all criteria pollutants. These effects would be minor. Detailed modeling results are outlined in Attachment I.

Table 2. Dispersion Modeling Results – 40 Foot Stack Height

Pollutant	Maximum 1-Hour Concentration			NAAQS	Averaging Time	Exceeded NAAQS?
	[µg/m ³]	[ppm]	[ppb]			
NO ₂	11.01	0.0059	5.9	53 ppb	Annual	No
				100 ppb	1-Hour	
SO ₂	7.6	0.0029	2.9	0.03 ppm	Annual	No
				0.14 ppm	24-Hour	
				75 ppb	1-Hour	
CO	12.9	0.0113	11.3	9 ppm	8-Hour	No
				35 ppm	1-Hour	
PM ₁₀	0.1082	-	-	150 µg/m ³	24-Hour	No
PM _{2.5}	0.01082	-	-	15 µg/m ³	Annual	No
				35 µg/m ³	24-Hour	

Table 3. Dispersion Modeling Results – 67 Foot Stack Height

Pollutant	Maximum 1-Hour Concentration			NAAQS	Averaging Time	Exceeded NAAQS?
	[µg/m ³]	[ppm]	[ppb]			
NO ₂	4.48	0.0024	2.4	53 ppb	Annual	No
				100 ppb	1-Hour	
SO ₂	3.09	0.0012	1.2	0.03 ppm	Annual	No
				0.14 ppm	24-Hour	
				75 ppb	1-Hour	
CO	5.2	0.0045	4.5	9 ppm	8-Hour	No
				35 ppm	1-Hour	
PM ₁₀	0.0044	-	-	150 µg/m ³	24-Hour	No
PM _{2.5}	0.0044	-	-	15 µg/m ³	Annual	No
				35 µg/m ³	24-Hour	

References

(USEPA, 1995). U.S. Environmental Protection Agency. 2003. SCREEN3 Model User's Guide. USEPA Document 454/B-95-004, Office of Air Quality Planning and Standards, Research Triangle Park, NC. September, 1995.

(USEPA, 2003). U.S. Environmental Protection Agency. 2003. Compilation of Air Pollutant Emission Factors, AP-42, 5th edition, Vol. I: Chapter 13.5: Industrial Flares. Accessed October 2011 at <http://www.epa.gov/ttnchie1/ap42/ch01/final/c13s05.pdf>.

40 CFR 51 Appendix W Guideline on Air Quality Models (Revised)

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APPENDIX D4

Detailed Modeling Results

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Nitrogen Dioxide (NO₂)

*** SCREEN3 MODEL RUN ***
 *** VERSION DATED 96043 ***

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SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT
 EMISSION RATE (G/S) = 0.580000
 STACK HEIGHT (M) = 12.2000
 STK INSIDE DIAM (M) = 3.0000
 STK EXIT VELOCITY (M/S) = 1.7825
 STK GAS EXIT TEMP (K) = 1860.0000
 AMBIENT AIR TEMP (K) = 293.0000
 RECEPTOR HEIGHT (M) = 1.5000
 URBAN/RURAL OPTION = RURAL
 BUILDING HEIGHT (M) = 0.0000
 MIN HORIZ BLDG DIM (M) = 0.0000
 MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM
 VOLUME FLOW RATE = 12.600000 (M**3/S)

BOUY. FLUX = 33.134 M**4/S**3; MOM. FLUX = 1.126 M**4/S**2.

*** FULL METEOROLOGY ***

 *** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	1	1.0	1.0	320.0	303.93	1.51	1.46	NO
100.	0.3707	4	20.0	20.6	6400.0	18.16	8.34	4.90	NO
200.	8.152	4	20.0	20.6	6400.0	18.16	15.75	8.84	NO
300.	11.01	4	20.0	20.6	6400.0	18.16	22.83	12.51	NO
400.	9.853	4	20.0	20.6	6400.0	18.16	29.71	15.75	NO
500.	8.227	4	15.0	15.5	4800.0	23.11	36.56	19.10	NO
600.	7.250	4	15.0	15.5	4800.0	23.11	43.07	21.90	NO
700.	6.300	4	15.0	15.5	4800.0	23.11	49.49	24.65	NO
800.	5.680	4	10.0	10.3	3200.0	33.02	56.17	28.01	NO
900.	5.235	4	10.0	10.3	3200.0	33.02	62.42	30.58	NO
1000.	4.791	4	10.0	10.3	3200.0	33.02	68.62	33.12	NO

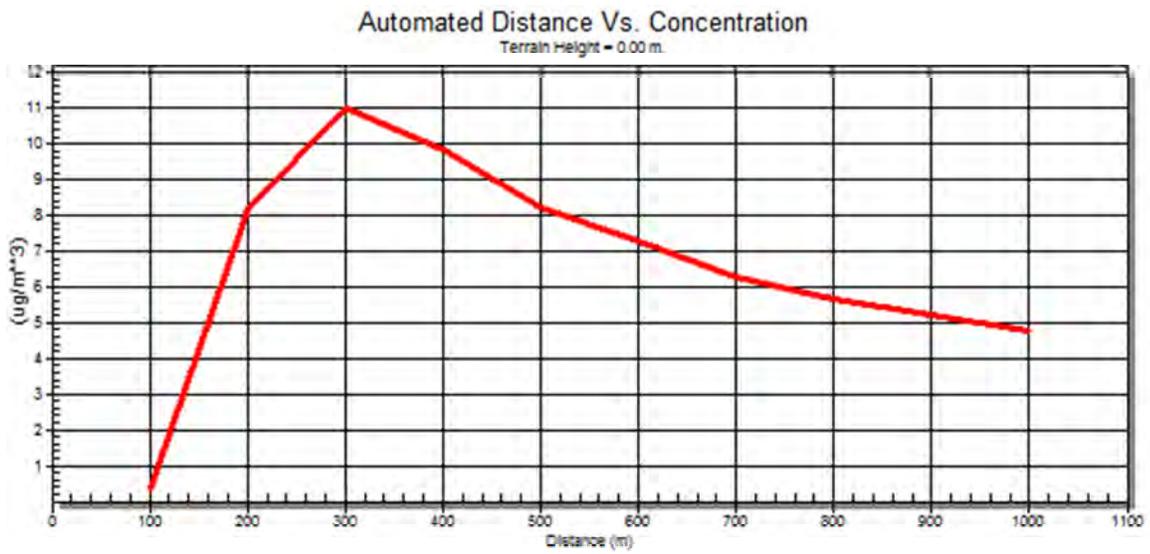
MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:
 300. 11.01 4 20.0 20.6 6400.0 18.16 22.83 12.51 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION MAX CONC DIST TO TERRAIN

PROCEDURE	(UG/M**3)	MAX (M)	HT (M)
SIMPLE TERRAIN	11.01	300.	0.



Sulfur Dioxide (SO₂)

*** SCREEN3 MODEL RUN ***
 *** VERSION DATED 96043 ***

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SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT
 EMISSION RATE (G/S) = 0.400000
 STACK HEIGHT (M) = 12.2000
 STK INSIDE DIAM (M) = 3.0000
 STK EXIT VELOCITY (M/S)= 1.7825
 STK GAS EXIT TEMP (K) = 1860.0000
 AMBIENT AIR TEMP (K) = 293.0000
 RECEPTOR HEIGHT (M) = 1.5000
 URBAN/RURAL OPTION = RURAL
 BUILDING HEIGHT (M) = 0.0000
 MIN HORIZ BLDG DIM (M) = 0.0000
 MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM
 VOLUME FLOW RATE = 12.600000 (M**3/S)

BOUY. FLUX = 33.134 M**4/S**3; MOM. FLUX = 1.126 M**4/S**2.

*** FULL METEOROLOGY ***

 *** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

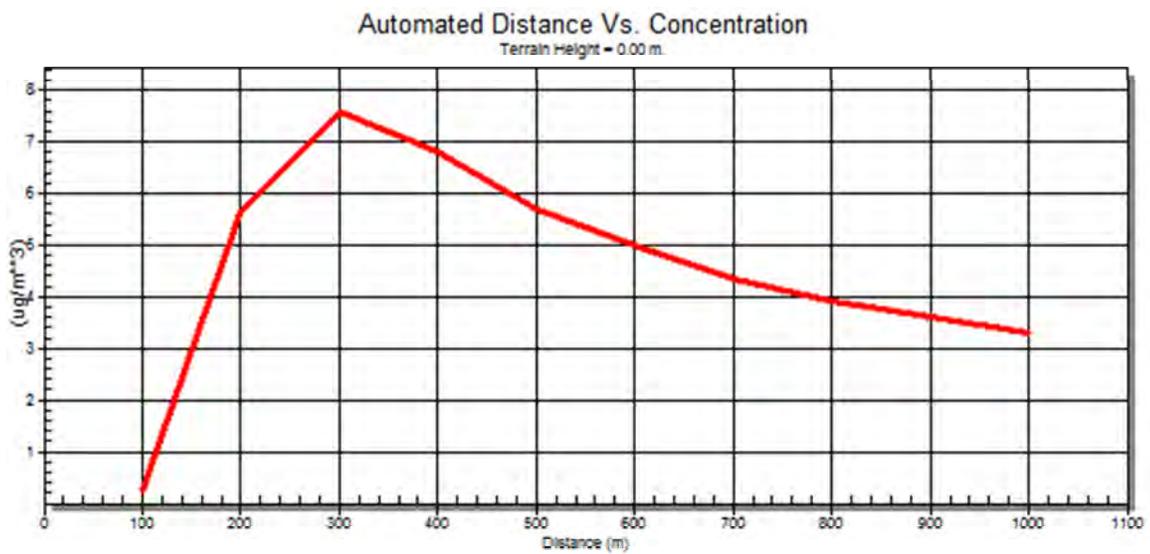
DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	1	1.0	1.0	320.0	303.93	1.51	1.46	NO
100.	0.2557	4	20.0	20.6	6400.0	18.16	8.34	4.90	NO
200.	5.622	4	20.0	20.6	6400.0	18.16	15.75	8.84	NO
300.	7.590	4	20.0	20.6	6400.0	18.16	22.83	12.51	NO
400.	6.795	4	20.0	20.6	6400.0	18.16	29.71	15.75	NO
500.	5.674	4	15.0	15.5	4800.0	23.11	36.56	19.10	NO
600.	5.000	4	15.0	15.5	4800.0	23.11	43.07	21.90	NO
700.	4.345	4	15.0	15.5	4800.0	23.11	49.49	24.65	NO
800.	3.918	4	10.0	10.3	3200.0	33.02	56.17	28.01	NO
900.	3.610	4	10.0	10.3	3200.0	33.02	62.42	30.58	NO
1000.	3.304	4	10.0	10.3	3200.0	33.02	68.62	33.12	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:
 300. 7.590 4 20.0 20.6 6400.0 18.16 22.83 12.51 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	7.590	300.	0.



Carbon Monoxide (CO)

*** SCREEN3 MODEL RUN ***
 *** VERSION DATED 96043 ***

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SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT
 EMISSION RATE (G/S) = 0.680000
 STACK HEIGHT (M) = 12.2000
 STK INSIDE DIAM (M) = 3.0000
 STK EXIT VELOCITY (M/S) = 1.7825
 STK GAS EXIT TEMP (K) = 1860.0000
 AMBIENT AIR TEMP (K) = 293.0000
 RECEPTOR HEIGHT (M) = 1.5000
 URBAN/RURAL OPTION = RURAL
 BUILDING HEIGHT (M) = 0.0000
 MIN HORIZ BLDG DIM (M) = 0.0000
 MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM
 VOLUME FLOW RATE = 12.600000 (M**3/S)

BOUY. FLUX = 33.134 M**4/S**3; MOM. FLUX = 1.126 M**4/S**2.

*** FULL METEOROLOGY ***

 *** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

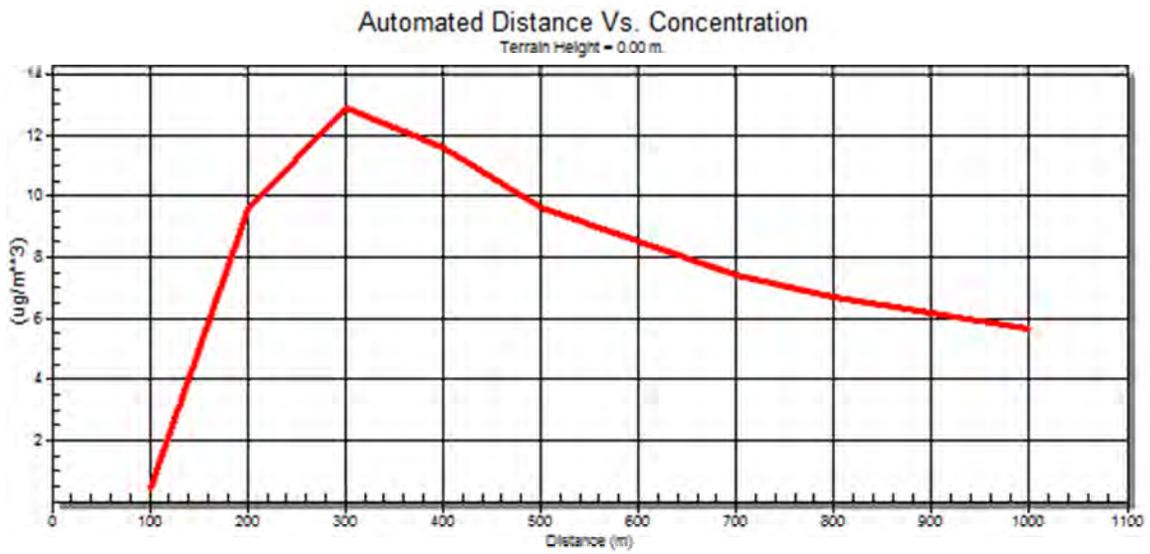
DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	1	1.0	1.0	320.0	303.93	1.51	1.46	NO
100.	0.4346	4	20.0	20.6	6400.0	18.16	8.34	4.90	NO
200.	9.558	4	20.0	20.6	6400.0	18.16	15.75	8.84	NO
300.	12.90	4	20.0	20.6	6400.0	18.16	22.83	12.51	NO
400.	11.55	4	20.0	20.6	6400.0	18.16	29.71	15.75	NO
500.	9.646	4	15.0	15.5	4800.0	23.11	36.56	19.10	NO
600.	8.500	4	15.0	15.5	4800.0	23.11	43.07	21.90	NO
700.	7.386	4	15.0	15.5	4800.0	23.11	49.49	24.65	NO
800.	6.660	4	10.0	10.3	3200.0	33.02	56.17	28.01	NO
900.	6.137	4	10.0	10.3	3200.0	33.02	62.42	30.58	NO
1000.	5.617	4	10.0	10.3	3200.0	33.02	68.62	33.12	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:
 300. 12.90 4 20.0 20.6 6400.0 18.16 22.83 12.51 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	12.90	300.	0.



Particulate Matter Less Than 10 Microns (PM₁₀)

*** SCREEN3 MODEL RUN ***
 *** VERSION DATED 96043 ***

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SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT
 EMISSION RATE (G/S) = 0.570000E-02
 STACK HEIGHT (M) = 12.3000
 STK INSIDE DIAM (M) = 3.0000
 STK EXIT VELOCITY (M/S) = 1.7825
 STK GAS EXIT TEMP (K) = 1860.0000
 AMBIENT AIR TEMP (K) = 293.0000
 RECEPTOR HEIGHT (M) = 1.5000
 URBAN/RURAL OPTION = RURAL
 BUILDING HEIGHT (M) = 0.0000
 MIN HORIZ BLDG DIM (M) = 0.0000
 MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM
 VOLUME FLOW RATE = 12.600000 (M**3/S)

BOUY. FLUX = 33.134 M**4/S**3; MOM. FLUX = 1.126 M**4/S**2.

*** FULL METEOROLOGY ***

 *** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

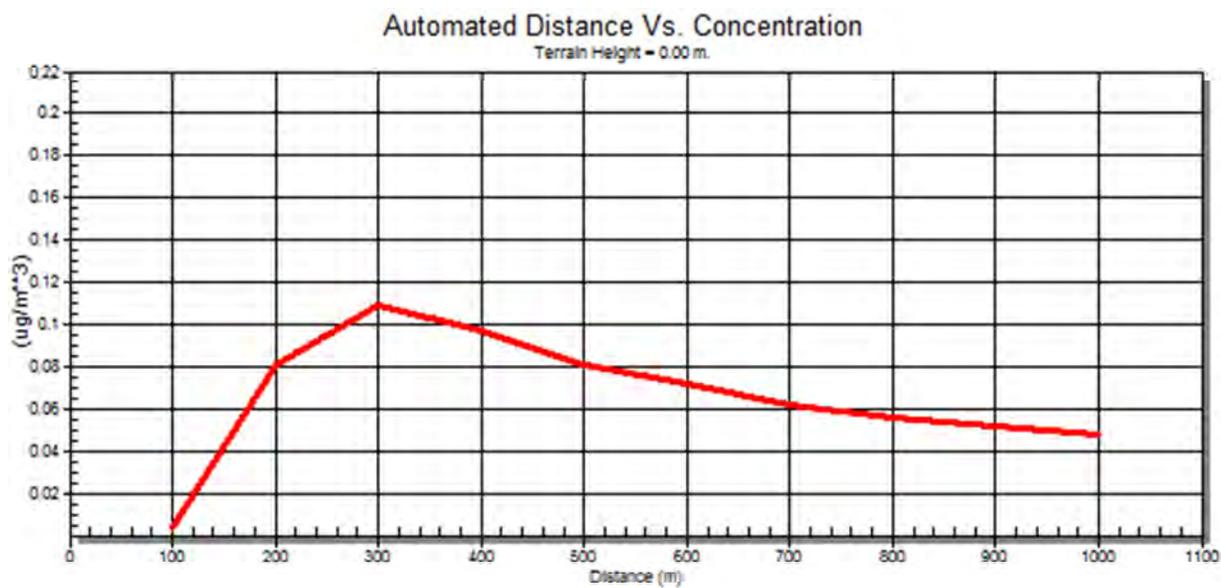
DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	1	1.0	1.0	320.0	303.93	1.51	1.46	NO
100.	0.3643E-02	4	20.0	20.6	6400.0	18.16	8.34	4.90	NO
200.	0.8012E-01	4	20.0	20.6	6400.0	18.16	15.75	8.84	NO
300.	0.1082	4	20.0	20.6	6400.0	18.16	22.83	12.51	NO
400.	0.9683E-01	4	20.0	20.6	6400.0	18.16	29.71	15.75	NO
500.	0.8086E-01	4	15.0	15.5	4800.0	23.11	36.56	19.10	NO
600.	0.7125E-01	4	15.0	15.5	4800.0	23.11	43.07	21.90	NO
700.	0.6191E-01	4	15.0	15.5	4800.0	23.11	49.49	24.65	NO
800.	0.5582E-01	4	10.0	10.3	3200.0	33.02	56.17	28.01	NO
900.	0.5145E-01	4	10.0	10.3	3200.0	33.02	62.42	30.58	NO
1000.	0.4708E-01	4	10.0	10.3	3200.0	33.02	68.62	33.12	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:
 300. 0.1082 4 20.0 20.6 6400.0 18.16 22.83 12.51 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	0.1082	300.	0.



Particulate Matter Less Than 2.5 Microns (PM_{2.5})

*** SCREEN3 MODEL RUN ***
 *** VERSION DATED 96043 ***

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SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT
 EMISSION RATE (G/S) = 0.570000E-03
 STACK HEIGHT (M) = 12.3000
 STK INSIDE DIAM (M) = 3.0000
 STK EXIT VELOCITY (M/S) = 1.7825
 STK GAS EXIT TEMP (K) = 1860.0000
 AMBIENT AIR TEMP (K) = 293.0000
 RECEPTOR HEIGHT (M) = 1.5000
 URBAN/RURAL OPTION = RURAL
 BUILDING HEIGHT (M) = 0.0000
 MIN HORIZ BLDG DIM (M) = 0.0000
 MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM
 VOLUME FLOW RATE = 12.600000 (M**3/S)

BOUY. FLUX = 33.134 M**4/S**3; MOM. FLUX = 1.126 M**4/S**2.

*** FULL METEOROLOGY ***

 *** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

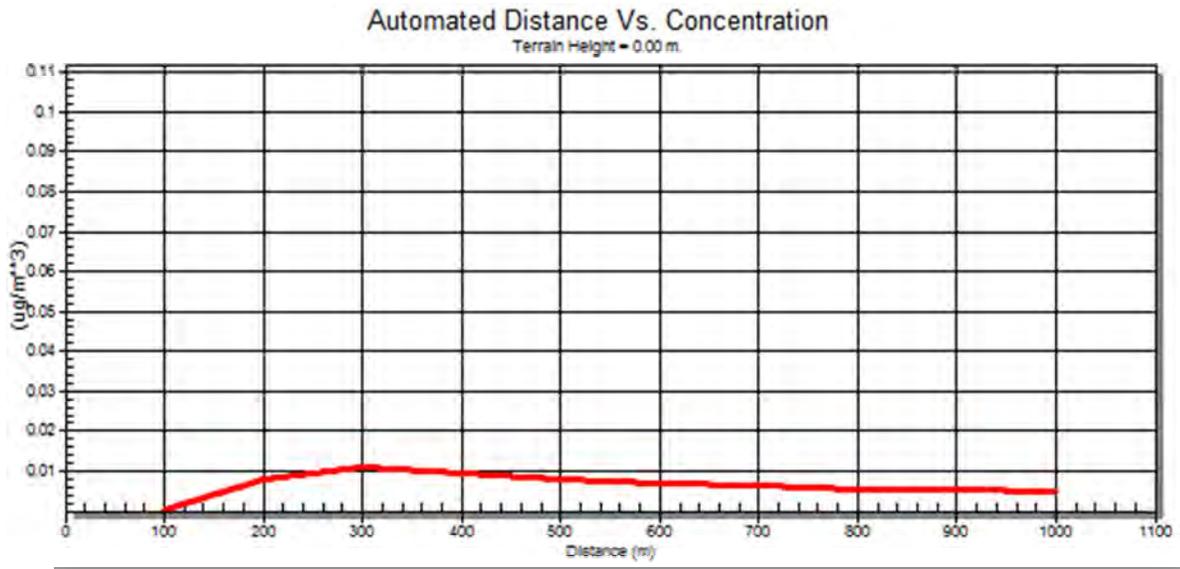
DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	1	1.0	1.0	320.0	303.93	1.51	1.46	NO
100.	0.3643E-03	4	20.0	20.6	6400.0	18.16	8.34	4.90	NO
200.	0.8012E-02	4	20.0	20.6	6400.0	18.16	15.75	8.84	NO
300.	0.1082E-01	4	20.0	20.6	6400.0	18.16	22.83	12.51	NO
400.	0.9683E-02	4	20.0	20.6	6400.0	18.16	29.71	15.75	NO
500.	0.8086E-02	4	15.0	15.5	4800.0	23.11	36.56	19.10	NO
600.	0.7125E-02	4	15.0	15.5	4800.0	23.11	43.07	21.90	NO
700.	0.6191E-02	4	15.0	15.5	4800.0	23.11	49.49	24.65	NO
800.	0.5582E-02	4	10.0	10.3	3200.0	33.02	56.17	28.01	NO
900.	0.5145E-02	4	10.0	10.3	3200.0	33.02	62.42	30.58	NO
1000.	0.4708E-02	4	10.0	10.3	3200.0	33.02	68.62	33.12	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:
 300. 0.1082E-01 4 20.0 20.6 6400.0 18.16 22.83 12.51 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	0.1082E-01	300.	0.



Commenter 1 – Victor Cooper

Joseph Zambelli - Draft EA on Viresco Energy Plant in Kanab, UT

From: "Victor Cooper" <rockingv@kanab.net>
To: <joseph.zambelli@netl.doe.gov>
Date: 8/12/2011 5:57 PM
Subject: Draft EA on Viresco Energy Plant in Kanab, UT

Mr. Zambelli

I am quite disturbed that the draft EA has found minimal impact on Kanab
Even more concerning is that according to the finding:

the relatively small size of the proposed facility (1.5 acres at a maximum of 72 feet in height)

I was at the last of the Kanab Planning & Zoning Committee meetings to address the Conditional Use Permit for the height of the "stack"

1-01

The Planning & Zoning Committee approved a 68ft stack with an enclosed "flare shield" so that the exhaust flame would not be visible

At the time of the meeting I asked the members of the Planning & Zoning Committee how they could approve a stack with a flare shield when they did not know the height of the flare.

It is of enormous concern to me that the DOE would deem it acceptable to release public money for a project on which the citizens of the host community have not been properly informed.

The figure of 72 ft in this finding indicates that the flare shield would be 4 ft high.

Is this a fact? Where did the 72ft stack height come from?

Could you please forward any information you have regarding the height of the flare, as the citizens of Kanab have not been given any information regarding these measurements.

1-02

Additionally, the draft EA states that 25 jobs would be created during construction of the plant but nowhere do I see any indication of any jobs created in the operation of the plant. If I missed something in the draft EA, would you be so kind as to point out to me how many, if any, jobs will be created if the plant becomes operational in Kanab?

Thank you for your time & it was good meeting you when you were down here for the scoping meeting.

Victor Cooper

Responses

Comment 1-01

DOE uses the NEPA process and in this case the EA to properly inform the public about the proposed project and all of its attributes.

The wording on page 1 of the conditional use permit authorizes a 60-foot tall gasifier with a 67-foot tall exhaust structure "plus the additional height of required and approved flare enclosures". The Final EA has been revised to clarify these dimensions. The height of the exhaust flare structure, including the enclosure structure, would be a maximum of approximately 72 feet. It is not unusual for specific details of a final design to be undetermined during the planning stage of a project, which is when environmental studies under NEPA are completed. Therefore, impacts may be based on reasonable assumptions about design conditions and would remain valid provided that the final design does not substantially alter the assumptions and introduce new impacts.

Comment 1-02

Section 2.7, Operation, states the following "Approximately 9 employees would be required for the operation of the Pilot Plant."

Section 3.10.2.1, Population and Housing, states the following "During operations, Viresco anticipates that nine employees would work onsite, five of which would be Viresco personnel and four would be contract employees. Viresco anticipates that employees would live in Kanab or the general area. Should any employees relocate to the area it would be a relatively small number (no more than nine employees) and negligible impacts on population and housing would be expected."

Section 3.10.2.3, Economy and Employment, states the following "Development of the Pilot Plant would create nine new jobs in the Kanab and Kane County area in the high-wage service industry (engineering). Considering that the major employers in Kane County include Best Friends Animal Sanctuary, Aramark (Lake Powell Resorts), Kane County Hospital, Kane County School District, Kane County Government, and the Federal Government (Economic Development Corporation of Utah, 2011), development of the Pilot Plant would help diversify the existing local service industry. A more diverse local service economy could help leverage Kanab and Kane County's proximity to nearby protected public lands (e.g., Grand Staircase-Escalante National Monument) into further diversification and overall economic growth."

E-1

Commenter 2 – Don Kramer

Page 1 of 1

Joseph Zambelli - Utah Biomass Coal fuel plant Kanab

From: "Don Karen Kramer" <moonglow@scintemet.net>
To: <joseph.zambelli@netl.doe.gov>
Date: 8/13/2011 4:00 PM
Subject: Utah Biomass Coal fuel plant Kanab

2-01

The section of the EA on the sound levels failed to take into consideration the Kane County Trap and skeet club located between the Landfill and the Public Safety facility. Shooting is every Saturday morning and occasionally on Wednesday afternoons and other unscheduled times. It has been operating there for over 5 years.

Don Kramer
Kanab

file://C:\Documents and Settings\Zambelli\Local Settings\Temp\XPpnpwise\4E469F9DM... 8/15/2011

Responses

Comment 2-01

The Kane County Trap and Skeet Club is a recreational facility located on Kaneplex Road near the proposed plant site. The facility would add to the ambient noise levels in the vicinity of the proposed Pilot Plant. Reference to noise from the trap and skeet facility has been added to Section 3.9.1.1.

Commenter 3 – Anonymous



Utah Coal and Biomass Fueled Pilot Plant EA



PUBLIC HEARING COMMENT FORM

Must be received by DOE on or before September 16, 2011.

(Please print clearly)

3-01

This is the most stupid idea I have ever heard of and I do have reasons that are backed by truth and fact

I would like to receive:

Notification of Availability of the Final EA

Computer file of the Final EA

Name: _____

Address: _____

E-mail: _____

<p>Comment forms may be mailed to: Mr. Joseph Zambelli (address on reverse side)</p>	<p>Comments may be sent by electronic mail to: Joseph.Zambelli@NETL.DOE.GOV</p>
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Public Hearing - August 30, 2011

Responses

Comment 3-01

Comment noted.

Commenter 4 – Mary Poe



Utah Coal and Biomass Fueled Pilot Plant EA



PUBLIC HEARING COMMENT FORM

Must be received by DOE on or before September 16, 2011.

(Please print clearly)

4-01

The EA does not address financing for this plant after these "30 days". It makes sense to plan far enough ahead for the future finances of this operation. If no money is available we look at the empty, useless, infrastructure that remains. Will it even have recycle value?

I would like to receive:

X Notification of Availability of the Final EA [] Computer file of the Final EA

Name: Mary Poe

Address: 1161 S. Kane

Kanab UT 84741

E-mail

Comment forms may be mailed to: Mr. Joseph Zambelli (address on reverse side) Comments may be sent by electronic mail to: Joseph.Zambelli@NETL.DOE.GOV

Public Hearing - August 30, 2011

Responses

Comment 4-01

The Draft EA in Section 2.8 explains that DOE's involvement with the proposed Pilot Plant would be limited to the first 30 days of operation over the course of the first year after construction. The Draft EA further states that Viresco plans to seek additional funding for continued operations after the DOE's financial assistance ends, including an additional 130-day testing period. However, DOE is not aware of any specific or identified plans by Viresco for operation of the proposed Pilot Plant beyond the 130 day testing period. In Section 2.7.5, Decommissioning, the Draft EA stated: "The proposed 1.5-acre site is part of a 10-acre parcel to be leased by Viresco for a term of 30 years. As per the negotiated terms and conditions of this lease, Viresco would be responsible for properly removing structures, equipment and debris, restoring the land to the original contour, and revegetating the land as necessary upon termination of the lease." Additional text has been added to this section in the Final EA describing the anticipated decommissioning process.

Commenter 5 –Anonymous

Thank you for your work on the Viresco project. There is a core group here in Kanab who disseminate misleading materials on this project. Sadly, there are those who see the materials and believe what's on them. I, personally, have received flyers, mailings and e-mails with misinformation. There is never any facts or sources listed.

The Kanab planning commission, city council, mayor, and city manager have done an amazing job. They have followed the law, gathered facts, and listened to the populace of Kanab. Lawsuit's against the city has resulted in those involved not being able to speak openly about this project.

The draft EA was very well done and answered the questions I had. Those who choose to find fault do not have the expertise, knowledge, or facts to support their position.

I fully support the technology being tested and the Viresco project. Without projects like this our country will continue to have energy related issues.

Thanks again for your time.

5-01

Responses

Comment 5-01
Comment noted.

Commenter 6 – Noel Poe

1161 South Kane Drive
Kanab, Utah 84741

August 31, 2011

Joseph Zambelli
NEPA Document Manager
DOI-NETL, M/S: B07
P.O. Box 880
Morgantown, West Virginia 26507-0880

Dear Mr. Zambelli,

Thank you for the opportunity to comment on the Draft Environmental Assessment (EA) for the Utah Coal Biomass Fueled Pilot Project in Kanab, Utah.

Major Flaws in the EA

6-01

1. There is a major flaw in the EA that is prevalent throughout the document. DOE's assessment on impacts only address the first 30 days of operation. According to the EA the DOE funds are expected to be spent by the time the pilot plant is built and the first 30 days of operation are completed. This does not mean that the environmental impacts have disappeared at that point. The environmental impacts are just starting after the small source permit is finished and Viresco moves on to a minor source or larger emissions operation. Right now is the only point in time that an agency will consider the environmental impacts.

DOE is providing the money to build the plant. Without DOE money the plant would never have been constructed (Section 2.4, last sentence). Therefore you must correct this deficiency in the EA by doing a thorough assessment of the environmental impacts during the life of the project. The project life might be as long as 30 years.

6-02

It would be more appropriate to cancel the EA and move into an Environmental Impact Statement. We all realize that the impacts are going to increase as the developer moves into another phase(s) that involves burning of up to 130 days in a year and a possible 90-day continuous run. As one example, Section 3.2.2 states impacts will be moderate if operating up to 130 days. What does "moderate" mean? In Salt Lake City or maybe Morgantown, moderate may mean nothing compared to the yellow and "red" days that are common. In Kanab moderate would probably be the worst day of poor air quality out of five years!

To simply make a statement that 150 tons of coal would be burn in first phase and that in the next phase 650 tons would be burned without any complete analysis is not sufficient. Even the discussion on page 21 is not sufficient because the information is full of adverbs like "may", "not expected", etc.

Responses

Comment 6-01

DOE's proposed action is to provide financial assistance to Viresco. DOE examined potential environmental impacts for Viresco's planned 30-day testing period of operation covered in the cooperative agreement. Because Viresco has expressed an interest in conducting additional testing of the process, DOE also evaluated the potential environmental impacts of an additional 130-day operational testing period. There are no specific plans for operation of the proposed Pilot Plant beyond the 130-day testing period. As stated in Section 2.8, Consideration of Connected Actions, of the Draft EA, "Viresco's plans for operating its facility after DOE's involvement ends are not well-defined and would depend on the objectives the provider of any additional funding sought to achieve. However, it is likely that any future operations would continue to test the gasification process in order to improve its operation and output to achieve high process efficiency." The analysis of potential environmental impacts for the currently proposed additional operational period of 130 days is covered as a connected action in the Final EA under Section 2.8 and under each environmental resource in Chapter 3. If Viresco were to seek federal funding for additional upgrades or expansions to the Pilot Plant, a future NEPA review by the agency that was considering providing additional funds would be undertaken at that time. Any further operation would depend on the objectives that agency sought to achieve, which is unknown at this time.

Comment 6-02

DOE has added definitions for impacts to Section 3.0 of the Final EA as follows:

Negligible – No apparent or measurable impacts are expected; may also be described as "none" if appropriate.

Minor – The action would have a barely noticeable or measurable adverse impact on the resource.

Moderate – The action would have a noticeable or measurable adverse impact on the resource. This category could include potentially significant impacts that would be reduced to a lesser degree by the implementation of mitigation measures.

Substantial – The action would have obvious and extensive adverse effects that could result in potentially significant impacts on a resource despite mitigation measures.

Beneficial – Impacts would benefit the resource.

The response to comment number 12-01 addresses DOE's decision with respect to an EIS.

Commenter 6 – Noel Poe (continued)

- 6-03** Figure 2-4 shows that 100% of the exhaust from the cyclone re-generator is nitrogen, water, carbon dioxide and oxygen. Do you really believe there won't be any toxic compounds, methane gas, or other substances released into the air?
- 6-04** Section 2.5.2: There is a statement that the closest *residential* property is 1.1 miles northwest. The EA should also state in this same section that there is a 200-bed prison within 0.5 miles of the plant. Under the section on Health and Safety from air borne pollutants, the EA should assess the impacts on 200 people living within 0.5 miles of the plant. Do inmates in a prison qualify as a population that must be considered under Section 3.10.2.4, Environmental Justice?
- 6-05** Pressure in the system during tests: There is no statement in the EA that I could find as to what pressures we are looking at. Temperatures are expected to get as high as 800 degrees (page 10) and there is a statement there will be high pressures. It seems like that information would be critical before you could assess the fire-fighting or Hazmat capability of local responders. Sections 3.9.1 and 3.9.2 are incomplete without this pressure information. This pressure information must be added to the EA. If it is not available the EA can't receive the blessings of a FONSI.
- 6-06** Section 2.8. The following sentence in the second paragraph bothers me: "*After the DOE's financial assistance ends, Viresco plans to seek additional funding for continued operations.*" If Viresco was serious about the project and believed in the project, wouldn't the CEO be seeking additional funding right now, even before construction starts? There are several places in the EA that have similar statements. Because these statements imply that Viresco is going to use up all the DOE (taxpayer) funds and then think about continuing, the final EA must contain a history of Viresco to confirm that this company and the owner Mr. Guthrie is reliable, follows through on commitments, has not declared bankruptcy leaving behind contaminated sites, etc.
- 6-07** Section 3.2.2: Several water quality permits are required in this section. However it is not clear from the text what agency has the authority to issue and monitor the permits. Please clarify if it is the State Division of Water Quality or some other entity.
- 6-08** Section 3.5.1.2: There is a statement that GHGs increase as human activities add carbon dioxide, methane, nitrogen oxide, and other greenhouse gases. The EA states in several places that these gases are being emitted into the air as a result of this pilot project. How can you state that this doesn't matter, just because this would be a small source? 543 tpy of CO2 from this plant is still an additional 543 tpy of CO2 that lead to GHGs.
- 6-09** Page 50: Isn't it interesting that Viresco plans to add biomass to the coal, but this page makes the statement that lignocellulosic biomass is not available in the area. Table 3.7-2 says that lignocellulosic biomass is required for this pilot plant. If I wanted to test the addition of biomass to coal in such a plant, I would have constructed the plant where lignocellulosic biomass is available. Wouldn't you? Shouldn't DOE ask the question where the biomass is coming from and if biomass will actually be added during the testing? If not, all statements about biomass must be removed, including the statement that adding biomass to the process will reduce GHGs (Section 1.2, last sentence).
- 6-10** Section 3.10.2.2: The document states that the majority of the 25 construction jobs will be drawn from local candidates. Does the local workforce really have the pipefitter and metalworking skills to assemble a plant that operates at 800 degrees F. and at high pressure? I suspect that a contract would be signed

Responses

Comment 6-03

Potential impacts to air quality are outlined in Section 3.5.2. Based on the analysis in the Final EA, the Pilot Plant would be either an insignificant or a minor source for all air pollutants including hazardous air pollutants (HAPs).

Comment 6-04

Section 3.1.1, Land Use, has been updated in the Final EA to correct distances to surrounding buildings and features in proximity to the proposed Pilot Plant. A new Figure 3-5 has been added to show the locations of nearby buildings. The commenter is correct that detainees housed in the Kane County Public Safety Facility would be among the individuals residing closest to the Pilot Plant. However, as described in Section 3.5.2, air emissions from the proposed Pilot Plant would not pose a public health risk based on the interpretation of Clean Air regulations, which require states to protect public health and safety through the permitting process. Because increases in emissions would be *de minimis* (of minimal importance) and would not contribute to a violation of any federal, state, or local air regulation, the UDEQ agreed that the Pilot Plant would be exempt from air permitting requirements.

Future detainees in the public safety facility might meet appropriate distinctions to be characterized as minority or low-income populations. However, the Draft EA did not identify the potential for significant adverse impacts on any resources in the area. Therefore, there is no basis for anticipating any disproportionately high and adverse impacts to environmental justice populations.

Comment 6-05

DOE revised Section 3.9.2 in the Final EA to analyze a potential catastrophic accident scenario during plant operations and emergency response as described in response to comment number 43-07.

Comment 6-06

As stated in response to comment number 6-01, DOE's proposed action is to provide financial assistance to Viresco. DOE has no regulatory jurisdiction regarding the project. DOE's cooperative agreement would extend to the 30 days of operation during the first year after construction. Because Viresco has expressed its interest in conducting additional testing of the process, DOE evaluated the potential impacts of an additional 130-day operational testing period. DOE is not aware of any specific or identified plans by Viresco for operation of the proposed Pilot Plant beyond the 130-day testing period.

Commenter 6 – Noel Poe (continued)**Responses (continued)****Comment 6-07**

Section 3.2.2 discusses the environmental impacts to aesthetics and does not discuss water quality permits; however, Table 2.5.2 discusses what permits would be needed for the proposed action. A construction NPDES Permit would be needed and would be administered by UDEQ, Division of Water Quality. This division would be responsible for verifying the SWPPP and erosion BMPs are implemented.

Comment 6-08

According to CEQ's draft NEPA guidance on "Consideration of the Effects of Climate Change and Greenhouse Gas Emissions," if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of CO₂-equivalent greenhouse gas (GHG) emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decisionmakers and the public. Emissions from the proposed Pilot Plant would be far below this threshold.

Comment 6-09

The commenter refers to a statement in Section 3.7.2 of the Draft ("Estimated amounts of lignocellulosic biomass to be used are not currently available..."), which the commenter apparently interpreted to mean that biomass is not available locally. But, the sentence continues, "...however, considering the wide variety of potential sources, it is not anticipated that supplies would be limited." As presented in Table 3.7-2, the lignocellulosic biomass would be "agricultural residues (including corn stover and sugarcane bagasse), dedicated energy crops, wood residues (including sawmill and paper mill discards), and municipal paper." At this time, Viresco intends to use a woody waste as the predominant source of the biomass feedstock; the likely supplier of the feedstock would be located in southern Utah. Section 3.7.1 of the Final EA has been revised to include the following, "The biomass feedstock would likely be woody waste provided to the Pilot Plant by a supplier located in Southern Utah."

Commenter 6 – Noel Poe (continued)

- 6-10 (con't)** | with an out-of-the-area construction company experienced with high pressure/heat piping and that company would bring in their own workers. Before the final EA is published, this information needs to be questioned and verified or remove the statement about a majority of 25 jobs will be local.
- 6-11** | The second paragraph of this section states that tax will be paid on the property once the plant is in operation. Is that correct? I have been told since this is state land neither the city or county will collect property taxes. This must be clarified in the final EA or EIS.
- 6-12** | Section 3.10.2.3: It is a big stretch to say that 9 additional jobs out of 1730 jobs in Kanab would have a minor beneficial impact. I think "minute" would be a better descriptor. If one motel closes because of fewer tourists, at least 9 jobs will be lost. Please adjust the EA statement.
- 6-13** | Section 5.1: There is a statement that Viresco is responsible for decommissioning of the plant at the end of the lease. What happens if all the tests are completed in five years? Does Viresco get to wait until the end of the 30-year lease before removing facilities and restoring land? If Viresco declares bankruptcy, are they still responsible for removing facilities and restoring land? Shouldn't the statement read that Viresco is responsible for decommissioning at the end of the tests or end of the lease whichever comes first? Please address this issue in the final EA and FONSI, or the EIS.
- 6-14** | Section 5.3: There is no mention of the material burned and released through the stack as being an unavoidable adverse impact. Is this an oversight?
- 6-15** | Page 76: In the Reference section there is a statement by Arun Raju, Viresco Energy, to Stacey Schueler that information regarding ash composition, power outages, process water, and evaporation pond details was a personal communication from Arun Raju, Viresco Energy. Is this sufficient? It seems there should be a more formal, documented, peer-reviewed description of these processes that DOE could use to make decisions that are in the EA. Are you sure you received all the adequate, accurate information to go with an EA? This is another reason that the EA is inadequate and an EIS is required.
- Please carefully review my points and concerns. The three major points are serious flaws in this document that either need corrected or we need to move into an EIS. If you need to contact me either use the above address or my email address at nmpoe0920@gmail.com
- Sincerely,
- Noel R. Poe

Responses

Comment 6-10

Although specialized construction skills may be required for the assembly of some components of the Pilot Plant, in DOE's experience with other demonstration projects, most construction activities would be comparable to those of many other commercial and industrial projects. Hiring decisions would, however, be the responsibility of the general contractor selected by Viresco and would depend on the availability of qualified local workers among other considerations.

Comment 6-11

Because the project would be a private enterprise (not owned by DOE) on property leased from SITLA, it would be subject to property tax assessments as confirmed by the Kane County Treasurer.

Comment 6-12

Comment noted. DOE has added definitions for impacts to Section 3.0 of the Final EA described as beneficial, negligible, minor, moderate, and substantial. A minor impact is one that would have a barely noticeable or measurable effect on a resource.

Comment 6-13

Section 5.1 of the Final EA has been revised as follows: "The lease for the property is for 30 years; however, the lease states that early termination of the lease could occur. Under this scenario, Viresco would be responsible for all decommissioning activities as described in Section 2.7.5." Under the terms of the cooperative agreement, Viresco would be responsible for all decontamination, decommissioning, and cleanup activities including any costs related to these activities.

Comment 6-14

Section 5.3 of the Draft EA specifically states that "Construction and operation of the proposed Pilot Plant would cause unavoidable air emissions." These air emissions are the result of the coal and biomass being processed and waste gases released through the stack.

Comment 6-15

DOE relies on project proponents to provide essential information about the technologies they propose to use, which must be supported by design data, industry standards, or other verifiable sources. Personal communications are often used in NEPA documents as references and are considered valid. All such communications become part of the administrative record of the EA.

Commenter 7 – Carol Williams

Page 1 of 1

Joseph Zambelli - Comment on coal gasification plant

From: "Carol Williams" <songlyrick@yahoo.com>
To: <Joseph.Zambelli@NETL.DOE.GOV>
Date: 9/1/2011 4:29 PM
Subject: Comment on coal gasification plant

7-01

Is the foundation/structure able to withstand an earthquake? their have been recent tremors close by and we are on a fault line Carol L. Williams (Kanab)

file:///U:\Documents and Settings\Zambelli\Local Settings\Temp\5\XPgrpwise\4E5FB2E4M... 9/2/2011

Responses

Comment 7-01

As stated in Section 3.3.2.1 "The area is in an increased risk for seismic activity; however, the plant would be built with the appropriate measures for industrial structures in an area subject to the level of seismic risk." Seismic management codes are included in the Utah building codes, which would guide the design of the plant building and structures.

Commenter 8 – Sue Dale

From: "ote dale" <otedale@mac.com>
To: <joseph.zambelli@netl.doe.gov>
Date: 9/3/2011 3:55 PM
Subject: gasification plant

8-01
8-02
8-03
8-04
8-05

Hello,
I have yet to get my questions answered:
1. "Why did he/they chose Kanab Utah?"
2. "Is it because Mr. Guthrie was able to purchase a 30 year lease from Sitka?" and, "Is it because Mr. Guthrie as well as people like representative Mike Nole thought to once again bamboozle the tiny little hamlet of Kanab."
3. Who exactly profits from this plant?
4. No this is not clean energy.....your DOE says so, why? because this is an experiment, well this experiment needs to be placed somewhere that is NOT pristine land, air and water, somewhere that is already polluted. Go once again back to #2 WHY KANAB?
5. We have laws right now in Kanab that governs when we can burn.....will this also apply to this Stupid stupid gasification plant?

I am completely against this plant being built here in Kanab, and hope that the wise people of Utah see to it that it does happen. Please.

Thank you for taking my comments,
Sue Dale (Resident of Kanab for 34 years, resident Utah 50 years. I am 63 years old.

Responses

Comment 8-01

DOE initiated a financial assistance award for Viresco's Pilot Plant project to satisfy a Fiscal Year 2010 Congressional earmark created by Senator Bennett for a "Coal and Biomass to Fuel Pilot Plant." In accordance with the earmark, DOE and Viresco Energy, LLC signed a cooperative agreement (DE-FE0002945) that would provide \$2,404,000 using appropriations under the line item for Fossil Energy Research and Development in Public Law 111-85 and the referenced Energy and Water Conference Report 111- 278.

DOE did not select this project under either a competitive or a non-competitive procurement and had no role in enacting this earmark. As the agency administering the financial assistance at the direction of Congress, DOE must comply with NEPA by assessing and considering the potential environmental impacts associated with the proposed project. DOE has no regulatory jurisdiction regarding the project. However, DOE may consider additional mitigation as a condition of its final NEPA decision.

NEPA requires that agencies evaluate reasonable alternatives to its proposed action. The purpose and need for agency action determines the range of reasonable alternatives. In this case, the purpose and need for DOE's proposed action is to comply with the Congressional earmark. The earmark calls for DOE to grant financial assistance for the project as proposed. Given that Congress chose to distribute funding for this particular project, the range of reasonable alternatives for DOE's consideration is the project as proposed by Viresco, any alternatives still under consideration by Viresco or that are reasonable within the confines of the project as proposed, and a no action alternative.

Viresco had already selected the technology for the project before the earmark was enacted. Viresco has not identified alternative sites, technologies or utilities other than those addressed in the EA. Alternatives still under consideration by Viresco or reasonably within the confines of the project as proposed have been evaluated in the EA, along with the no action alternative.

Because the federal government would not have an ownership interest in the Pilot Plant, the proponent, Viresco, would benefit from any profits on operations and be responsible for any taxes on income as well as property tax as explained in response to comment number 6-11.

Comment 8-02

Although DOE did not participate in selecting the site, site availability is obviously a consideration in any site selection process.

Commenter 8 – Sue Dale (continued)

Responses (continued)

Comment 8-03

As stated in the response to comment number 8-01, because the federal government would not have an ownership interest in the Pilot Plant, the proponent, Viresco, would benefit from any profits on operations and be responsible for any taxes on income as well as property tax as explained in response to comment number 6-11.

Comment 8-04

Although the proposed Pilot Plant would be a demonstration facility, DOE considers its gasification process to be a future source for producing clean energy from coal and biomass when compared to conventional combustion processes. The subject of this comment regarding the proposed location of the Pilot Plant has been discussed in response to comments 8-01 and 8-02..

Comment 8-05

Regulatory requirements for air quality are outlined in Section 3.5.2.2 Regulatory Review. Viresco and all contractors would comply with all applicable air pollution control regulations, including: Permissible Open Burning (Utah Code 19-2-114).

From: "don collins" <donandotto@yahoo.com>
 To: <joseph.zambelli@netl.doe.gov>
 Date: 8/4/2011 8:45 PM
 Subject: gasification plant

as a resident of Kanab I have many concerns I what about the disposal of the waste water into our sewage ponds , that could kill the bacteria necessary to have a vibrant sewage treatment system I what will be the effects and who will be liable if this occurs ?

DON COLLINS

9-01

E-13

Responses

Comment 9-01

Under the proposed action (30-day operations), Viresco's options to manage process wastewater would be to either recycle to the extent possible or treat and dispose offsite by a licensed contractor. See also response to comment number 56-15, which discusses water demand and Viresco's plans to manage the process wastewater.

With respect to the connected action (130-day operations), as stated in Section 3.8.2 "Total daily process wastewater discharge under the connected action would total approximately 930 gpd. Similar to the 30-day scenario, it is anticipated that some or all of this effluent could be recycled depending on the water composition. Viresco is considering one of the following options to manage the process wastewater: 1) construct an evaporation pond to collect part or all of the process wastewater for recycling; 2) transport, treat, and dispose of the process wastewater offsite, similar to that described under the proposed action; or 3) discharge to the City of Kanab's sanitary sewer system.. The total daily rate would represent less than one percent of the two lagoons currently utilized by the City of Kanab. Additionally, prior to storage in the evaporation pond or discharge into the public sewer system, Viresco would ensure that the process wastewater would be treated to standards as specified by the state (UDEQ, Division of Water Quality) and federal regulations. Therefore, it is expected that the process wastewater potentially generated by the Pilot Plant would have a long-term minor impact on capacity and performance of the Kanab wastewater system. Kanab's wastewater lagoons would have the capacity to meet this demand without the need for upgrades. The use of Kanab's wastewater system would be based on specifications and a defined sampling plan agreed upon between Viresco and the City of Kanab."

The potential future discharge of process wastewater to the Kanab system is, therefore, only one of the options available to Viresco, and Viresco's decision among options would be based in part on the future characterization of the wastewater generated. In the event that Viresco were to propose discharging its process wastewater to the Kanab system, the wastewater would be subject to industrial pretreatment regulations under the NPDES permitting program. An appropriate sampling plan agreed upon between Viresco and the City of Kanab would ensure that the wastewater being sent to the City's lagoons would not alter or damage the existing system.

Commenter 10 – Don Collins

(9/6/2011) Joseph Zambelli - coal gasification

From: "don collins" <donandotto@yahoo.com>
To: <joseph.zambelli@netl.doe.gov>
Date: 9/6/2011 10:51 AM
Subject: coal gasification

10-01

the beauty of this area is pretty special. why ruin it with a ugly
polluting factory smoke stack ?

10-02

who benefits from this project, no one except mike noel and a few
insiders!!! i think noel should be investigated for conflicted of
interest! greed is his only concern!
thanks for your attention don collins

Responses

Comment 10-01

Comment noted.

Comment 10-02

Comment noted.

Commenter 11 – Brenda Johnson (USGS)

Page 1 of 1

Responses

Comment 11-01

Comment noted.

Joseph Zambelli - Draft EA for the Utah Coal and Biomass Fueled Pilot Plant (DOE/EA-1870D)

From: "Brenda J Johnson" <bjjohnso@usgs.gov>
To: <joseph.zambelli@netl.doe.gov>
Date: 9/8/2011 8:20 AM
Subject: Draft EA for the Utah Coal and Biomass Fueled Pilot Plant (DOE/EA-1870D)
CC: "Gary D Lecain" <gdlecain@usgs.gov>

Joseph,

11-01

The US Geological Survey has reviewed the Draft Environmental Assessment for the Utah Coal and Biomass Fueled Pilot Plant Kanab, Utah. We do not have substantive comments at this time.

Thanks

Brenda

Brenda Johnson
Environmental Management Branch (EMB)
Administrative Assistant
U.S. Geological Survey Mail Stop 423
Room 5A326
12201 Sunrise Valley Dr.
Reston, VA 20192
Tele (703) 648-6832
Fax (703) 648-5644
bjjohnso@usgs.gov

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E-15

Commenter 12 – Noel Poe

1161 South Kane Drive
Kanab, Utah 84741

September 4, 2011

Joseph Zambelli
NEPA Document Manager
DOI-NETL, M/S: B07
P.O. Box 880
Morgantown, West Virginia 26507-0880

Dear Mr. Zambelli,

I would like to express one major concern with the Draft Environmental Assessment (EA) for the Utah Coal Biomass Fueled Pilot Project in Kanab, Utah.

Substantive Flaw

Department of Energy standards for an EA states that if there are "...other intervening circumstances that exist either at the onset of the project or if determined through the EA process an Environmental Impact Statement (EIS) may be prepared." In the Draft EA, Figure 1-1 explains the NEPA process. That figure shows if there are "extraordinary circumstances" then "Yes, obviously an EIS is required".¹

I believe the level of controversy associated with this project meets the definition of either, or maybe both, an "intervening circumstance" or an "extraordinary circumstance."

The Draft EA on page 3 and in Section 1.5 recognizes the level of controversy with 99 individuals commenting on the project even before the EA was initiated. At the Scoping Meeting there were approximately 150 people present and oral comments were received from 21 individuals. During the 30 day scoping period there were 146 individuals that sent in 192 separate submissions for a total of 803 comments. Figure 1-3 visually shows the range and percentage of the comments. In addition the Draft EA explained the mistakes in Native American consultation and the corrections that DOE had to undertake.

In addition, DOE is aware of the three lawsuits that have been filed against Kanab City because of the process the city used to move this project through their administrative requirements. In addition the citizens group wrote a petition and in 10 days of sitting in booths around the community, they obtained 690 signatures of which 650 were certified as legal and official by the County Clerk and approved by the City Manager. This far exceeded the 410 signatures require to get the initiative on a ballot. At the August 23rd City Council meeting, the city's legal counsel encouraged the Council to allow the issue to go to vote quickly. The lawyer's quote in the newspaper was "Let's just get this to the people!" However the Council ignored their lawyer's

¹ Direct wording from Figure 1-1, page 3 of Draft EA.

12-01

Responses

Comment 12-01

DOE prepared this EA to determine whether an environmental impact statement (EIS) is required (see 40 CFR § 1501.4). Because of the degree of public interest in this project, DOE also held a public scoping meeting, one public hearing, and a tribal community meeting to encourage and facilitate public participation and comment that would assist DOE in determining whether an EIS would be required.

Based on the EA and the public comment, DOE has determined that its proposed action and this project, as evaluated in the EA, would not have a "significant environmental impact", as this phrase is used for purposes of determining whether to prepare an EIS.

DOE's proposed action and Viresco's proposed project are not closely similar to ones which normally require an EIS and the nature of the project is similar to ones for which agencies usually prepare an EA. Therefore, DOE is not required under 40 CFR 1501.4(e)(2) to make a FONSI available for public review in advance of a final decision.

Commenter 12 – Noel Poe (continued)

Responses

12-01
(con't)

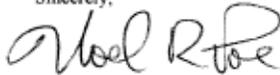
advice and tabled action on the initiative petition. If the Council doesn't act by September 2nd the ballots must go to print and the initiative won't be on the 2012 general election ballot.

To further demonstrate the controversy associated with the coal-gasification plant, there were eleven (11) individuals that submitted their names to run for the three (3) city council seats that are up for election in November. For the first time in decades, there needs to be a primary election in Kanab. The primary is September 13th and will narrow the field of candidates down to six (6) individuals. Since the initial deadline for applications, three (3) people opposed to the coal-gasification project withdrew their names in hope that others running on that platform will unseat the two (2) incumbents during the primary election. If the above three paragraphs do not show the intense controversy over this issue, then nothing does.²

I searched the DOE website trying to find the NEPA policies, DOE Director's Orders or a handbook that defines whether major controversy is included in the definition of "intervening circumstance" or an "extraordinary circumstance." I do know for certain in the Department of Interior (DOI) guidance for land managing agencies that extreme controversy requires an EIS is completed.³ Since DOI policies are based on the Council of Environmental Quality (CEQ) requirements and regulations, I suspect that DOE must also follow a similar definition and action.

Therefore, I believe that DOE must close the EA process and move to an EIS based on the level of controversy. In an earlier letter to you dated August 31, 2011, I stated several other substantive flaws that also require an EIS.

Sincerely,



Noel R. Poe

² The above information either comes from the Draft EA or was cited from the August 31, 2011 edition of the Southern Utah News. Kanab's population is only 4312 residents.

³ I spent 19 of 38 years as a National Park Service superintendent dealing with NEPA compliance.

Commenter 13 – Don Collins

From: "don collins" <donandotto@yahoo.com>
To: <joseph.zambelli@netl.doe.gov>
Date: 9/9/2011 11:09 PM
Subject: gasification plant

13-01

sirs; another concern i have, is the proximity of the gas. plant to the newly being constructed reservoir! why build the plant on the shore of the new pond. what will be the effect of the emissions and dust on the water, fish and birds? also the aesthetics to the fishing and swimming should be considered !!! surely there is a better location for this project !! thank you DON COLLINS

13-02

Responses

Comment 13-01

Potential impacts to air quality are outlined in Section 3.5.2. Based on the analysis in the Final EA, the Pilot Plant would be either an insignificant or a minor source for all air pollutants including hazardous air pollutants (HAPs). Although the new sources of air emissions would be small, additional air dispersion modeling was performed for the Final EA in response to comments on the Draft EA. The dispersion modeling incorporated worst-case metrological conditions. The maximum predicted downwind concentrations of all criteria pollutants would be well below the National Ambient Air Quality Standards (NAAQS).

DOE has determined that no additional air quality studies are necessary to take the required hard look under NEPA. Notably, the Utah Division of Air Quality (UDAQ) concurs with the evaluation in the EA that the Pilot Plant will be an insignificant source of air emissions, and that it meets the requirements for a Small Source Exemption under Utah Administrative Code (UAC) R307-401-9. A copy of the concurrence letter from UDAQ is included as commenter 48 (see comment number 48-01).

In addition, because the emissions would be very small and concentrations would not exceed the NAAQS, it is anticipated that there would be negligible to minor impacts to the nearby reservoir, wildlife, or recreation areas.

Comment 13-02

Section 3.1.2 (in Land Use) of the Draft EA concluded that the Pilot Plant would not be compatible with local recreational sites because of diminished aesthetic quality resulting from visibility of manmade structures. Section 3.2.2 (in Aesthetics) addressed the potential impacts of the Pilot Plant on the recreational facilities planned for the Jackson Flat Water Supply Storage Project and concluded that the recreational facilities plans were conceptual and that the city could account for the presence of the Pilot Plant when making final plans and designs for those facilities.

Commenter 14 – Halle Anders

Page 1 of 1

Joseph Zambelli

From: "Halle Anders" <halle.anders@gmail.com>
To: <joseph.zambelli@netl.doe.gov>
Date: 9/13/2011 2:33 PM

Mr. Zambelli:

I heard you speak in Kanab about a month ago on the draft report concerning the coal gasification plant proposed by Viresco and Mr. James Guthrie. I was not encouraged by your or your colleagues' remarks as it seems the plant is a done deal, but I am concerned about the fly ash that may escape. No one knows if it will, and that was not addressed in the draft-- the issue of it being placed in our local dump, or falling into the reservoir being built so close to the plant site. I'm concerned about the liquid waste harming our local treatment facilities. Will the taxpayers have to pay for a new site if the effluent from Viresco's process kills the bacteria in the treatment pools? Did you specifically attend to that concern in your assessment? Many other issues concern me and the hundreds of citizens here in our small town. Please look more closely before you rubber stamp an approval.

halle anders
477 w. aspen dr.
kanab, UT 84741
halle.anders@gmail.com

14-01

Responses

Comment 14-01

The subject of this comment regarding disposal of ash at the Kane County Landfill has been addressed in the response to comment number 15-09. No airborne releases of coal ash are expected. Section 3.5.2.1 of the Final EA has been updated based on comment.

In the event that Viresco were to propose discharging the process wastewater to the Kanab system, the wastewater would be subject to industrial pretreatment regulations under the NPDES permitting program. An appropriate sampling plan agreed upon between Viresco and the City of Kanab would ensure that the wastewater being sent to the City's lagoons would not alter or damage the existing system.

E-19

Responses

Comment 15-01

Comment noted.

Commenter 15 – Marlene Barnes

Joseph Zambelli - My Comments on Draft EA for the Utah Coal and Biomass Fueled Pilot Plant

From: Marlene <marlene@dogonfunny.com>
To: "Joseph Zambelli" <Joseph.Zambelli@NETL.DOE.GOV>
Date: 9/14/2011 11:15 PM
Subject: My Comments on Draft EA for the Utah Coal and Biomass Fueled Pilot Plant
Attachments: specificQuestionsOnEA.doc; specificQuestionsOnEA.doc

Dear Mr. Zambelli,

I am very unhappy with the DOE's findings with regard to the Viresco Coal-Gasification facility to be funded by a Congressional earmark.

I feel that my concerns were not taken seriously and that only the most positive spin was put on the Viresco project by the DOE because of the added pressure of having to make an "all or nothing " decision.

My life and the lives of everyone in Kanab will be profoundly effected by your final decision and I want to appeal to you to read all of my objections carefully and either turn this project down, or at least do a full EIS.

Kanab is a beautiful and wonderful town and this decision could destroy all of that. If I did not believe so strongly that this is wrong for Kanab, I would not have spent literally hundreds of hours and hundreds of dollars fighting it.

Please look at the objections that we all have objectively and put yourself in our place. This is WRONG.

Sincerely,
Marlene Barnes
1094 S. Vermillion Drive
Kanab, UT 84741
443-631-5382

15-01

Commenter 15 – Marlene Barnes

I am outraged at the assumptions, inaccuracies and incompleteness of the Draft EA that was presented to the people of Kanab who were part of the scoping process. I feel that most of my concerns went unanswered or simply disregarded.

I want a full EIS of this project and below I have 6 pages of excerpts from the EA with my corresponding comments (in red) to substantiate my request.

P5 par5:

Charley Bulletts of the Southern Paiute Consortium [felt] 1) that the increasing number of federal projects in the desert southwest are having adverse impacts on water demand and supplies; 2) that the water stored in the Jackson Flat Reservoir project will be used for the coal gasification pilot plant and not for irrigation and recreation, as originally planned; 3) that the proposed project's emissions will generate pollution, which will adversely impact medicinal plants that grow in the area; 4) that DOE and other federal government agencies need to improve their communication with the Tribes and provide regular meeting updates; 5) that he is opposed to the proposed coal gasification project's current location and believes the site was selected due to its proximity to nearby surface mines, which would provide the coal; 6) that different government offices often provide inconsistent information or offer different stories when contacted; 7) that the Kaibab are very unhappy that cultural resources and burial sites were disturbed at the nearby Jackson Flat Reservoir project; and 8) that Water to Tribes is a living Breathing element and like all things living if it's abused it will show us it's Strength. **Who has ever addressed these concerns? It is a disgrace that the Paiute Nation has not been fully involved in these plans from the very beginning. The Federal government has an obligation to do so and this obligation has not been met.**

15-02

P10 list1:

- ... Coal would be delivered to the site pre-ground, although Viresco is considering adding coal grinding for future operations. **We were NEVER told about Viresco's possible intention of grinding coal in Kanab. This raises MANY more health and safety issues.**
- Design and install the syngas flare.
- ... The plant would be operated using both a computerized performance reporting and documentation system and manual daily logs to ensure that monitoring and other management activities are performed correctly. **Viresco is going to police itself?!**
- Interconnect the proposed Pilot Plant with existing utility systems, including potable (i.e., culinary or drinking) water and sewer to be supplied by the City of Kanab **How do we know that process water will not be released into the sewer system? This study does not address the possible effect on our waste water ponds if Viresco were to go to 130 days or more and utilize our sewage system.**

15-03

15-04

15-05

P11 par 1:

... 2.5 miles south of the center of the City of Kanab in Kane County, Utah. As previously mentioned the terms and conditions of the lease have been negotiated but not yet signed. **Has the lease ever been signed?**

15-06

P11 par 2:

Approximately 0.25 mile north of the site, construction has commenced for the Jackson Flat Water Supply Storage Project, which would consist of the construction of a dam embankment, water supply pipeline, water storage area (i.e. reservoir), and pump station. The closest residential property is located approximately 1.1 miles northwest of the site on S. Hopi Drive. **NOT true – Fredonia residents are within .5 miles as will be residents of the new jail.**

15-07

P15 Table 2.5-1: (excerpts):

Process Wastewater - Total of 2,200 gpd, majority would exit the system as steam and the remaining would be recycled within the process. **If the wastewater has pollutants, wouldn't the steam contain pollutants as well?**

15-08

Solid Waste - 1,166 pounds of ash per day, Total of 26 tons including fines for 30 days of testing. Would be collected, analyzed, and disposed of in an appropriate landfill. **What about the hazardous pollutants in this ash – what makes our landfill "appropriate" for hazardous waste?**

15-09

Air emissions - Most notable emission would be carbon monoxide and is estimated to be less than 4 tons for the 30 days of operation. **Why is carbon monoxide more "notable" than sulfur dioxide, nitrous oxides, and dioxins and where are the figures on these pollutants? Why are they not even mentioned?**

15-10

Responses

Comment 15-02

DOE acknowledges the concerns of the Kaibab Band of Paiutes and has endeavored to correct misunderstandings that occurred during the preparation of this EA. However, DOE is one of many agencies of the U.S. Government, each with separate jurisdiction, and the Department can only address the potential impacts of activities under its own jurisdiction, such as the financial assistance proposed for this project.

Comment 15-03

Pre-pulverized coal would be delivered to the Pilot Plant in bags for the 30-day demonstration under the cooperative agreement with DOE. The analysis of the connected action in the Final EA was expanded to include a review of the preprocessing (i.e. pulverization) of coal on site during the 130 days of operation and included in the emission estimations (see Section 3.5.2.1 of the Final EA). The total fugitive particulate emissions were estimated to be 0.74 lbs for a 130-day period.

Comment 15-04

Viresco would be required to operate the facility in compliance with all applicable federal, state, and local laws, regulations, and ordinances as would be the case for all comparable commercial and industrial facilities. Respective regulations would require the maintenance of data and may require the submission of reports to demonstrate compliance, and the Pilot Plant would be subject to inspection by state and federal regulators under applicable laws.

Comment 15-05

Under the proposed action the wastewater would either be recycled or transported offsite for treatment and disposal and the use of Kanab's wastewater system would not be needed other than for sanitary waste from employees. The response to comment number 9-01, addresses the potential discharge of process wastewater to the Kanab system under the connected action (130-day operations).

Comment 15-06

Under the terms of the cooperative agreement, Viresco's lease agreement with SITLA must be executed prior to release of DOE funds for the project, and Viresco would be responsible for all decontamination, decommissioning, and cleanup activities including any costs related to these activities.

Comment 15-07

The Draft EA stated that the closest residential area to the Pilot Plant site would be approximately 1.1 miles to the northwest. The commenter correctly points out that the Draft EA did not consider the proximity of residences in Fredonia. In fact, a number of residences across the state line in Arizona are within 1 mile of the proposed Pilot Plant site; however,

Commenter 15 – Marlene Barnes (continued)**Responses (continued)**

because of a topographic ridge along the state border south of the plant site, the Pilot Plant would not be visible from these residences. Also, a residential farm property off US 89A in Utah west of the Pilot Plant site was inadvertently overlooked in the Draft EA. In response, a new Figure 3-5 has been added to the Final EA showing the locations of buildings in closest proximity to the proposed Pilot Plant. The Final EA has been corrected throughout to describe these distances appropriately: The closest residential property (a farm) in Utah is located off US 89A approximately 0.6 mile directly west of the site. A few residences in Arizona east of US 89A are just outside the half mile radius with the closest being approximately 0.55 mile southwest of the proposed Pilot Plant.

Comment 15-08

Section 3.5.2 discusses the emissions that would be expected from the flare exhaust, which includes steam.

Comment 15-09

Section 3.7.1, Table 3.7-1 lists six landfills, including the Kane County Landfill, that are permitted by the state of Utah to accept special waste as defined in UAC R315-301, including ash. These landfills operate in accordance with the *Utah Solid and Hazardous Waste Act*, Title 19, Chapter 6, Part 1, Utah Code Annotated (UCA) 1953, as amended and the *Utah Solid Waste Permitting and Management Rules*, Utah Administrative Code (UAC) R315-301 through 320. The landfills have satisfied all regulatory requirements to accept nonhazardous waste, but would not be allowed to accept hazardous waste. The ash produced by the Pilot Plant is expected to be nonhazardous; however, if testing results indicate it is hazardous; the ash would be disposed of at a facility permitted to accept hazardous waste.

Comment 15-10

Estimated emissions are outlined in Section 3.5.2.1 of the EA. CO was “notable”, because more CO would be emitted than other criteria pollutant during the operation of the facility.

Commenter 15 – Marlene Barnes (continued)

- 15-11 P 15 par3:
Information about potable water use contradicts itself and seems intentionally misleading within the table and in the illustration (Figure 2-4) and paragraphs on p 15. Separating potable vs. non-potable water makes no sense since the paragraph states that ALL water will be supplied by Kanab's potable water system:
 Process water ... 1,270 gpd for a total of 38,100 gallons for 30 days of operation.
 (Figure 2-4 shows 1320 gpd.)The daily potable water demand by the Pilot Plant when it is operational would be limited to the needs of a workforce of 9 employees at 250 gpd for a total of 7,500 gallons for 30 days of operation. Both the process water and the potable water would be supplied by the City of Kanab's potable water system. The total daily rate of potable water use (1,520 gpd) (according to the diagram this figure should be 1370) represents 0.03 percent of the existing wells and spring capacity that supply the City of Kanab's potable water system.
- 15-12 **Statements about numbers of trucks needed is incomplete and seem intentionally under reported (found in section 2.7.1):**
 4 trucks for coal
 10 trucks for sand
 4 trucks for propane
No statement made regarding truck numbers to be used for these other needed supplies:
 Unknown number of trucks to re-supply Garkane with additional propane
 Unknown number of trucks for unknown quantity and type of biomass
 Unknown number of trucks to bring in hydrogen
 Unknown number of trucks need to remove hazardous waste water IF it is not put into our sewage system.
 Unknown number of trucks to bring in all "modular" parts of the laboratory (and plant) equipment...
- 15-13 P18 par 4:
 Ash would be received in a hopper after cooling. The ash and fines would be collected, analyzed, and disposed of in an appropriate landfill (**What makes the Kanab landfill appropriate for hazardous wastes?**). Wastewater, which is generated as blowdown from the boiler feedwater, would be collected and reused within the process. (**According to the written and illustrated descriptions, the water for the process must be potable – there is no proof that the water, once treated by Viresco, WILL be potable.**) Process gases from the hydrogasifier would be sent to the flare, and no condensation of process water is expected during normal operation (**an awful lot is being assumed here**). The product gas from the gasifier would also be flared in the flare stack.
- 15-14 P 19 par 1:
 ...As a minor emitter for air pollutants ...exemption from a full air emissions permit... emissions would be made up almost entirely of typical combustion gas components...with small amounts of, criteria pollutants (i.e. non-hazardous) and a minute amount of uncombusted hydrogen. With regard to hazardous air pollutants (HAPs), high molecular weight organic compounds, radionuclides or toxic metals would not be expected in quantities that would pose a health hazard, based on the combustion efficiency of the flare and the small concentrations of metals and radionuclides in the feedstock (**a lot of assumptions are being made, especially since the feed stock is still an unknown**)
- 15-15 P21 par 2
 After the DOE's financial assistance ends, Viresco plans to seek additional funding for continued operations. Viresco's plans for operating its facility after DOE's involvement ends are not well-defined and would depend on the objectives of any additional funding sought to achieve. However, it is likely that any future operations would continue to test the gasification process in order to improve its operation and output to achieve high process efficiency. Viresco has informed DOE that it intends to operate its Pilot Plant for a maximum of 130 days during a calendar year if it is able to obtain financing. (**This statement confirms the citizen's fears that this "pilot R&D plant" is only a stepping stone to greater industrialization of Kanab – something that the VAST majority of Kanab citizens DO NOT WANT.**) These additional operations would need to be approved by UDEQ if emissions from the plant were to exceed those allowable under the small source exemption.

Responses

Comment 15-11

Total process water demand (non-potable use) for the Pilot Plant under the proposed action would be approximately 3,290 gpd, potentially all of it supplied from the City of Kanab. It is anticipated that up to 850 gpd would come from recycled water from other plant processes, which could reduce the process water demand to 2,440 gpd. Additionally, it is estimated that employees of the facility would use 250 gpd of the City's water (potable water use). Section 2.7, including Table 2.7-1 and Figure 2-4, has been revised to clarify water demand and source of the water supply.

Comment 15-12

Section 2.9.2 has been updated to provide projected traffic volumes resulting from the transport of construction equipment and materials and the materials and waste during operation. It is estimated that approximately 2 to 5 truck deliveries on average would occur on a daily basis and up to 30 automobile roundtrips per day would occur over the four-month construction period. During operations, it is conservatively estimated that 4 to 5 truck deliveries on average would occur on a daily basis and 10 to 12 automobile roundtrips would result from employees and the occasional visitor for both the proposed action and connected action.

Comment 15-13

The subject of this comment regarding disposal of ash at the Kane County Landfill has been addressed in the response to comment number 15-09. The process water does not need to meet drinking water standards (i.e., "potable"), because it will not be consumed by humans.

Comment 15-14

Section 2.7.3 of the EA describes the products and wastes generated by the proposed Pilot Plant, which provides summary information about emissions. A full discussion of the effects of emissions on air quality is provided in Section 3.5.2.

Comment 15-15

As stated in Section 2.2 of the EA, "Viresco has no plans to commercialize the proposed Pilot Plant at the Kanab site in the future; it would remain a research and development facility."

Commenter 15 – Marlene Barnes (continued)

P21 par 5:

After DOE's involvement ends, Viresco may consider other options for management of the process wastewater (e.g. storage in an evaporation pond for potential re-use). Depending upon the results of analysis, excess process wastewater could be discharged to the City sewer system or removed by commercial services for appropriate disposal. Potential impacts of this option for wastewater management are addressed as connected action impacts in Section 3.6, Groundwater, and Section 3.8, Utilities. Viresco does not intend to pursue any of these options during DOE's involvement.

P 23 par6 under 2.9.3 Surface Water:

15-16

... There are no catalogued lakes or reservoirs in the drainage basin. **Completely false. What about the Jackson Flat reservoir within .25 miles?**

P 29 par 1:

... City of Kanab to re-zone the 10-acre property from RR-1 (Very Low Density Residential) to M2 (Light Manufacturing) on October 13, 2010. **(This zoning change was improperly announced and misleading, only identifying Jim Guthrie as the applicant rather than Viresco Energy and it is being contested in a law suit by a group of concerned citizens)** which was approved by a unanimous vote at the Kanab City Council Meeting on November 9, 2010 (City of Kanab, 2010). The M2 zoning designation is meant "to provide space for small warehousing, light manufacturing **(What makes this facility "light manufacturing"?)**, fabrication, wholesaling, service and other similar commercial establishments which are combined with manufacturing or warehousing uses and to locate these establishments in a location compatible with one another and where they are convenient to the commercial areas in the City of Kanab". **The Kanab Land Use Ordinance does not include permitted uses that would specifically address the project; however, the most applicable use would be "miscellaneous light manufacturing", which is permitted in the M2 designation. Structures within 100 feet of adjoining zones are not allowed to have heights greater than those allowed in the adjoining zone. They changed the zoning and then granted a CUP over the loud and CONTINUAL PROTESTS of most of the Kanab citizens. When the P&Z commission was given a list of over 300 questions about health and safety they turned the questions over to the city engineer, who admitted he did not have the knowledge to answer them, so he drastically condensed the questions and gave them to Jim Guthrie to answer. This was after promising to get the answers from an impartial source!**

15-17

P 29 par 2:

...A conditional use permit was approved by City of Kanab Planning Commission on July 20, 2011 enabling Viresco to exceed height limits **(The height limit has never been determined or revealed)**

P30 par 1:

... Kanab's future plans for the area within 0.25 miles to the north of the site include recreational land uses. Use of the site for an industrial facility (the Pilot Plant) would not be considered compatible with recreational sites, such as parks, primarily due to diminished aesthetic quality... **(Just because the land use in this area has been mismanaged and shoe-horned into an unknown political agenda is not a reason to justify this latest attempt to completely ignore the intended land use and general plan.)**

P30 par 2:

... Viresco would comply with Chapter 10 of Kanab's Land Use Ordinance, which sets restrictions on nuisances ... the Pilot Plant stack could be up to 67 feet in height. **(This is NOT true – the City did not establish an upper limit to the stack heights AT ALL.)** which required a conditional use permit issued by the City of Kanab Planning Commission (July 20, 2011) to exceed the 40-foot height limit.

P31 par 7:

...Although the distance is greater than a mile, residents in the area would have views of the site. Adverse aesthetic factors often consist of construction-related noise, truck traffic, dust, and the facility itself as it is constructed. However, based on the distance from the site to the nearest residential receptors, noise, traffic, and dust impacts would not be anticipated **(NOT true for Fredonia nor for the Jackson Flats Reservoir) ...**The viewshed currently contains structures in the foreground associated with Kanab Municipal Airport as well as moving vehicles and airplanes. In addition, the Kane County Public Safety Facility and Kane County Landfill facilities are viewable in the background. Thus, the existing

15-18

Responses

Comment 15-16

Because the Jackson Flat Water Supply Storage Project has not been completed, there is no impoundment; hence, this future water body has not been cataloged by the state. Potential cumulative impacts to this reservoir are discussed in Section 4.2.

Comment 15-17

DOE considers land use planning and zoning decisions to be under the jurisdiction of the Kanab City Planning and Zoning Department. That department determined that the Pilot Plant is consistent with the zoning designation of the site and the master plan.

The wording on page 1 of the conditional use permit authorizes a 60-foot tall gasifier with a 67-foot tall exhaust structure "plus the additional height of required and approved flare enclosures". The Final EA has been revised to clarify these dimensions. The maximum height of the exhaust flare structure, including the enclosure structure, would be approximately 72 feet. It is not unusual for specific details of a final design to be undetermined during the planning stage of a project, which is when environmental studies under NEPA are completed. Therefore, impacts may be based on reasonable assumptions about design conditions and would remain valid provided that the final design does not substantially alter the assumptions and introduce new impacts.

In Section 3.1.2, the Draft EA noted that the use of the proposed site for an industrial facility would not be considered compatible with recreational areas because of diminished aesthetic quality. However, the section also pointed out that the Kanab City Planning and Zoning Department approved the zoning change for the site to support an industrial facility, that plans for recreational facilities associated with the Jackson Flat Project are currently conceptual, and that the Planning and Zoning Department is aware of the respective projects and can plan future land uses in the area accordingly.

Comment 15-18

The response to comment number 15-07 addresses the proximity of residential properties to the proposed Pilot Plant.

Section 3.9.2 (in Public Health and Safety) addresses potential noise impacts, and Section 3.5.2 (in Air Quality and Climate) addresses emissions, including dust. The comment on truck deliveries has been addressed in response to comment number 15-12.

Figure 3-6 has been revised in the Final EA (now Figure 3-7) to show approximately how large the Pilot Plant would appear from the same vantage point in comparison to the visibility of nearby manmade

Commenter 15 – Marlene Barnes (continued)

15-18
(cont'd)

viewshed from the residential area currently contains several manmade elements, such that the construction of the Pilot Plant **(It's ugly now, so let's make it uglier?)**

P32 par 1:

... Overall, aesthetic impacts would consist of the visible presence of the facility ... and truck traffic at the site. **(which I have already pointed out as having been grossly under estimated by conveniently leaving out other truck deliveries)**...The support structure containing the hydrogasifier, fluidized bed regenerator, stack, etc., would be the most noticeable structure, as the stack would likely be approximately 67 feet in height (possibly up to 72 feet with the flare enclosure), while the major part of the structure would be about 60 feet high **(no CUP has been given for a 60 foot high gasifier. The ONLY CUP is for the STACKS and the height is STILL not known)**. The structure would generally look like scaffolding with piping...

P 40 par 5 & 6 Also P 41 par 2:

Because of the location of the proposed Pilot Plant site within approximately 0.25 mile of the Jackson Flat Water Supply Storage Project, and because Native American remains were inadvertently discovered during the construction for that project, the Kaibab Band of Paiute Indians have expressed serious concerns about the siting of the proposed Pilot Plant...
...It is unlikely but possible that unanticipated discoveries may be made during construction... [including] archaeological materials, both prehistoric and historic, and human remains. In the event that an unanticipated discovery is made, all construction activity in the immediate vicinity of the discovery would cease and a buffer zone of 100 feet would be established...

15-19

... the proposed project ... will not require an onsite archaeological monitor. Therefore, DOE will ensure that an on-site or construction supervisor would monitor the excavation process. Upon any discovery, DOE will be contacted immediately and a buffer zone will be created around the discovery site. DOE would insure... a qualified archeological consultant ... local and available to be onsite in a matter of 24 to 72 hours to ensure that appropriate actions are taken ... **(A construction supervisor is going to recognize human remains or culturally significant artifacts? And this person would be motivated to halt construction and add delay, increase costs, etc. to the budget? This is actually preposterous)**...

p 41 par 5:

With regard to hazardous air pollutants (HAPs), high molecular weight organic compounds or toxic metals would not be expected in quantities that would pose a health hazard, based on the combustion efficiency of the flare and the small concentrations of metals in the feedstock to the gasifiers. **(Throughout this EA, words such as "unlikely", "unanticipated", "not expected" are used to describe every conceivable accident. When ARE accidents ever likely, anticipated or expected?)**

15-20

P 45 bulleted item 2:

Prohibition of Particulate Matter (Utah Code 19-2-102)

... no person shall handle, transport, or store any material in a manner which may allow unnecessary amounts of air contaminants to become airborne. During construction reasonable measures may be required to prevent unnecessary amounts of particulate matter from becoming airborne... Viresco and all contractors would comply with all applicable air pollution control regulations. **(Self-monitored AGAIN)** ...

15-21

P48 par 2-4:

... minor impacts to groundwater are expected to result from operation of the Pilot Plant. No specific information on the fluctuation of groundwater levels in the immediate vicinity of the project site is available; however, groundwater aquifers in the area are generally an abundant resource; therefore, minor impacts on groundwater levels would be expected. **(Again, impacts are being minimized and based on assumptions and incomplete information.)** During operations, accidental spills of toxic substances, such as petroleum products, could be a potential source of groundwater contamination. ... therefore, a minor potential for groundwater contamination to occur would be expected. **(What makes this MINOR - more assumptions?)** ... future operations up to 130 days per year may include the installation of an evaporation pond which would hold process wastewater... designed based on the analysis of the wastewater from tests **(By Viresco)** and the corresponding regulatory requirements. Typically these types of ponds are

Responses

Comment 15-18 (continued)

features, including the Kanab Municipal Airport, the Kane County Public Safety Facility, and the Kane County Landfill.

The comment regarding the facility height and conditional use permit has been addressed in response to comment number 15-17.

Comment 15-19

The onsite or construction supervisor as well as construction workers would be instructed on the potential for archeological remains to be present, the type of artifacts that could be encountered, and the appropriate actions to take in the event artifacts are discovered. As stated in Section 3.4.2 of the EA, Viresco would contract with a qualified archeological consultant in advance of construction activities the consultant would be called upon in the event of a discovery. The response to comment number 34-07 also addresses this comment.

Comment 15-20

As stated in Section 3.5.1.1 of the EA, National Ambient Air Quality Standards and Existing Air Quality, air quality regulations would be enforced by the US EPA Region 8 and the UDEQ, Division of Air Quality.

Comment 15-21

The EA states that groundwater required for the operation of the Pilot Plant represents 0.07 percent of the existing wells capacity for 30 days of operation and 0.08 percent for the 130 days of operation. Therefore impact would be minor.

As described in text added to Section 3.0 of the Final EA (see response to comment number 6-02), a moderate impact would have noticeable or measurable adverse impacts on a resource.

As for the evaporation pond, provisions and requirements for groundwater quality protection are found in the Utah Code Annotated (UCA) Section R317-6, which provide the basis. UCA R317-6-2 lists the groundwater quality standards that are adopted for protection of groundwater quality. UCA R317-6-3 through R317-6-5 define groundwater classes, protection levels for each class, and aquifer classification, respectively. Section R317-6-6 dictates that no person may construct, install, or operate any new facility or modify an existing or new facility that discharges or would probably result in a discharge of pollutants that may move directly or indirectly into groundwater without first obtaining a groundwater discharge permit from the Executive Secretary. It also states the application requirements for groundwater discharge permit, outlines reporting of discharge system failures, and specifies corrective actions required.

Commenter 15 – Marlene Barnes (continued)

**15-21
(cont'd)**

lined with High Density Polyethylene (HDPE) (Raju, A., 2011)... high tensile strength and chemical resistance with excellent stress-crack resistance and low temperature properties for highly reliable containment... no impacts to groundwater resources would be expected. **(Who is going to make sure that any of this is true – I see that this statement is based on information by the Viresco engineer.)**

...As the Pilot Plant would operate longer, the chance of accidental spills increases however as stated under the proposed project potential for contamination to occur would be minimized through the implementation of the facility's SWPPP and SPCC Plan, therefore, a minor potential for groundwater contamination to occur would be expected. **The term "MINOR" does not apply to every environment. In a desert climate, groundwater contamination has a much greater impact for a longer time.**

15-22

P 51 par 3:

Releases of hazardous materials to the environment are always a possibility when hazardous materials are in use or are produced at a facility. Viresco would develop appropriate spill response, pollution prevention, and emergency response plans to address the medical and environmental hazards. **...(Self-policed again.)** ...a minimum, a SWPPP and an emergency response plan. Spill response training would be provided to employees working with the hazardous materials stored and used on-site. In addition, protective measures, such as providing secondary containment around hazardous material storage areas...as necessary and appropriate **(who decides what is necessary and appropriate?)**... minimize the potential for impacts from spills of hazardous materials. Should a spill happen, it would immediately be reported to the jurisdictional authorities and technically qualified hazardous material (HAZMAT) responders would be hired for the clean-up. These firms would be notified of the Pilot Plant's needs in advance of construction and would be secured under contract to respond in the event of a spill in a timely and professional manner (Viresco Energy, LLC, 2010.) **Self-policed! Who is going to enforce this? Where will these teams be coming from? What if something happens on a Sunday? If the teams are coming from anyplace other than local, they have a 1 ½ hour trip at minimum.**

15-23

P 54 par 3:

Process wastewater from the Pilot Plant will be recycled for re-use within the plant. The process wastewater would flow onto a concrete catch-pad, then into a sump where it gets returned back to the coal slurry feed area for continued use. Therefore, process wastewater will have no impact to the City of Kanab's wastewater system. **This is absolutely an invalid assumption and it contradicts information given previously in this report. Even Viresco has said that they only THINK that they may be able to reuse the water.**

15-24

P 54 par 4:

...Garkane Energy, which is expected to have adequate capacity **(ask Garkane's customers how adequate they are)** to serve the Pilot Plant...improvements include easements, necessary system improvements, and a 3 phase 12.5kV power line constructed and ran to the site...DOE anticipates that the improvements and easements would occur in existing disturbed areas or adjacent to existing rights-of-way **(a BIG assumption)**, which would result in minimal impacts. The Pilot Plant would have a minor impact on Garkane Energy's ability to provide and distribute electricity. **We often lose power when it rains or snows – this statement is grossly optimistic.**

15-25

P55 par 1:

Process wastewater from the Pilot Plant under the connected action may continue to be recycled, sent to an evaporation pond or it may also be treated through the City of Kanab's wastewater system. The total daily rate would represent less than one percent of the two lagoons currently utilized by the City of Kanab. Therefore, it is expected that the process wastewater potentially generated by the Pilot Plant would have a minor impact on capacity of the Kanab wastewater system. **This directly contradicts the quote from page 54 (above). Also, what about the toxins in the wastewater that would kill the beneficial bacteria that keeps these lagoons viable?**

15-26

P56 par 2:

The Fire Department has two fire stations **(1 engine each)** within the City limits of Kanab. The main station is located at 601 S 100E and the second station, called the Ranchos Station, is located on Powell Drive. The Ranchos Station is the closest to the proposed project site and houses the HAZMAT Operation Trailer (City of Kanab, 2011a). The Department is now a member of a mutual aid agreement between Kanab City, Long Valley Fire Department, East Zion Fire Department, and Cedar Mountain Fire Department as per a memorandum of understanding approved May 22, 2011 by the City of Kanab's Council (City of Kanab, 2011b). All these fire districts would participate in

Responses

Comment 15-22

The SWPPP would be prepared in compliance with the Utah Department of Environmental Quality, Division of Water Quality requirements.

Requirements for secondary containment for storage of oils, lubricants, and hazardous materials would apply under the Oil Pollution Prevention regulation for the Clean Water Act as well as the Resource Conservation and Recovery Act.

As stated in response to comment number 43-07, DOE revised Section 3.9.2 in the Final EA to describe a potential catastrophic accident scenario during plant operations and associated emergency response.

Comment 15-23

The subject of this comment has been addressed in the response to comment number 15-05.

Comment 15-24

The information was taken from a Will Serve letter provided by Garkane Power, dated August 8, 2011, and signed by Jeff Vaughn, the Kanab Area Manager. This letter will be included in the administrative record of the EA.

Comment 15-25

The text referenced in comment number 15-23 is discussing the proposed action, whereas the text referenced in this comment is discussing the possible connected action (130-day operation).

See responses to comments 9-01 and 15-05, which discuss the handling of the process wastewater under the connected action and proposed action, respectively.

Comment 15-26

As stated in response to comment number 43-07, DOE revised Section 3.9.2 in the Final EA to describe a potential catastrophic accident scenario during plant operations and emergency response.

Commenter 15 – Marlene Barnes (continued)

**15-26
(cont'd)**

the region's mutual aid agreement and would assist in an emergency if called upon. **Kanab's volunteer fire dept, has 2 engines and 2 ambulances. The Long Valley FD and the East Zion FD are miniscule with much less staff. Anything with a sizeable number of firefighters and equipment is 1 1/2 away. This is a ridiculous assumption of preparedness.**

15-27

P64 par 1:
Development of the Pilot Plant would create nine new jobs in the Kanab and Kane County area in the high-wage service industry (engineering). Considering that the major employers in Kane County include Best Friends Animal Sanctuary, Aramark (Lake Powell Resorts), Kane County Hospital, Kane County School District, Kane County Government, and the Federal Government (Economic Development Corporation of Utah, 2011), development of the Pilot Plant would help diversify the existing local service industry **Best Friends alone employs more than 500 people. The statement that 9 jobs can diversify ANYTHING is absolutely stupid. According to Jim Guthrie himself, the jobs will be filled by Viresco employees from Riverside, CA, except for a janitor, a night watchman and possibly 2 other menial positions. I employed literally 50 -100 people over a 10 month period when I had my house built – maybe DOE should consider giving me a 2.4 million dollar grant.**

Responses

Comment 15-27

Comment noted.

Commenter 16 – Anonymous

From: EMAIL ADDRESS REDACTED
 To: <Joseph.Zambelli@NETL.DOE.GOV>
 Date: 9/16/2011 1:03 AM
 Subject: Comments on Utah Coal Pilot Gasification Project

September 14, 2011

None of my personal identifying information can be used in making this statement and I do not want my comments made public. I repeat, no name or personal emails (including EMAIL ADDRESS REDACTED) shall be made available. I make these comments as a concerned citizen of Kanab and Kane County for over 20 years and an asthma sufferer.

While I recognize the vast amount of work involved in any environmental analysis other than a categorical exclusion, I am not satisfied with much of the Draft EA for the Viresco Biogasification Plant.

16-01

I think that one of the most critical aspects left out of this document is that it has not been vetted by the U.S. EPA. While EPA is a political entity subject to pressure just like DOE, I feel that their expertise would provide valuable information to this discussion.

As the Utah environmental regulatory entity's Air Division has calculated the plant's emissions based only on coal and only for the original timeperiod given by Guthrie, I think that one of 2 things must occur: either the air emissions must be entirely re-evaluated to calculate emissions to reflect the most recent plans for coal operations and the other feedstocks which still remain unspecified, OR Viresco must be held to the original conditions for which he applied. I am astonished at how fast and loose Guthrie can play with the specifications of his project and why he can have that much latitude when applying for permits or NEPA authorization.

16-02

In some of the initial meetings with the City of Kanab, Guthrie claimed that grinding of feedstocks would occur off-site and trucked in to arrive on-site in their final form. That does not seem to be the case shortly after the process begins according to the Draft EA. Safety considerations must include a baghouse should any material grinding occur on site and all conveyance mechanisms must fully contain potential emissions of ground feedstocks (whatever they may be).

Kanab and the surrounding region are generally regarded as a "quality of life" community that attracts retirees to its clean, beautiful vistas. In fact, several years ago, the Southern Utah News profiled a study that said most of the economic basis for Kanab was not extractive industries or ranching but taxes from retired people. Somehow the intangibles valued by these retirees has to be accounted for in the economic analysis between the proposed plant and the No Action Alternative.

16-03

How did the Draft EA address my scoping comments? Many questions remain.

16-04

I still question the purpose and need as given: they do not address a need for this site in particular, nor is there a required purpose to "experiment" on a process that seems to be fully realized in existing facilities.

16-05

The greenhouse gas analysis seemed to be given short shrift because there was an expectation that it couldn't possibly reach the 25,000 pound threshold but the

16-06

Responses**Comment 16-01**

The Draft EA was widely distributed to federal and state agencies, Native American tribes, and local officials. Copies were provided to U.S. EPA Region 8 (including Utah) and Region 9 (including Arizona); neither regional office commented on the Draft EA.

Comment 16-02

The subject of this comment has been addressed in the responses to comment numbers 51-23 and 27-05.

Comment 16-03

The subject of this comment has been addressed in the responses to comment numbers 21-03 and 26-10.

Comment 16-04

DOE considered all scoping comments in the preparation of the Draft EA as described in Section 1.5 of the Draft EA (Section 1.4.2 of the Final EA) and focused the impact analysis accordingly.

Comment 16-05

The subject of DOE's purpose and need has been addressed in the response to comment number 8-01 and in Section 1.2 of the EA Viresco's objective is to evaluate the technical feasibility of using steam hydrogasification to convert coal and/or biomass such as agricultural or wood processing waste into synthesis gas (syngas), and ultimately into clean fuels such as substitute natural gas, sulfur-free Fischer-Tropsch diesel, jet fuel, dimethyl ether, and methane. As stated in Section 1.2, "Viresco has been involved in the funding and development of a gasification technology conceived by the University of California, Riverside (UCR) College of Engineering's Center for Environmental Research and Technology. This gasification technology is based on the SHR process. UCR and Viresco have conducted research on this gasification technology in a laboratory-scale batch process and the results indicate that this technology has the potential to be a commercially viable means to produce fuels using domestic resources. A system analysis study of the technology concluded that the process proposed by Viresco has the potential to reduce capital costs and achieve higher conversion efficiencies compared to conventional, partial oxidation-based gasification processes. The next step in development of this technology is to evaluate the process at a larger scale (i.e. pilot scale)."

Comment 16-06

The subject of this comment has been addressed in the response to comment number 51-20. The threshold is 25,000 metric tons, not 25,000 pounds.

Commenter 16 – Anonymous (continued)

**16-06
(cont'd)**

calculations were incomplete to prove that point. Please perform the complete analysis for each emission, including all connected actions and all feedstocks.

16-07

I would STILL like to see a full remediation plan for the decommissioning of the plant and a discussion of all of the cradle-to-grave handling of all water, all products, all emissions and all wastes, particularly once the feedstocks have been specified. Can DOE itself require a remediation bond beyond the minimal one which SITLA requires and, if so, make it comprehensive enough to cover the worst-case scenario?

I would like to request hard copies of all materials produced.

Please send them to:

NAME AND ADDRESS REDACTED

Thank you in advance and thank you for considering my comments in revamping the Draft EA.

Responses

Comment 16-07

Section 2.7.5 was revised in the Final EA to include a discussion of specific decommissioning activities that would occur. DOE's cooperative agreement with Viresco includes a condition that the lease with SITLA must be executed prior to release of DOE funds for the project. The cooperative agreement also states that Viresco is responsible for all decontamination, decommissioning and cleanup activities or any costs related to these activities. The lease with SITLA requires a bond to guarantee the performance of all covenants and obligations under the lease.

Commenter 17 – Diane Decker

Joseph Zambelli - Environmental Assessment on the Utah Coal and Biomass Fueled Pilot Plant

From: "Diane Decker" <ddecker@div.duke.edu>
To: ""joseph.zambelli@netl.doe.gov" <joseph.zambelli@netl.doe.gov>
Date: 9/7/2011 10:49 AM
Subject: Environmental Assessment on the Utah Coal and Biomass Fueled Pilot Plant

Mr. Zambelli,
I request that you extend the time allowed to comment on the above report.

This "plant" is a environmental disaster for the citizens of Kanab. I've been following the story closely, and believe they should have additional time to assess this report.

This "plant" is a waste of taxpayer money. It is a travesty... some sort of political deal where the cost will be unfairly borne by the citizens of Kanab. They are making heroic efforts to be heard... please allow them the time they need to register their concerns.

Thanks,
Diane Decker

17-01

Responses

Comment 17-01

Comment noted. See also response to comment number 20-01 regarding to requests for extension of the comment period.

Commenter 18 – Herbert Alexander

Joseph Zambelli - Kanab Biomass

From: "Herbert Alexander" <mickeydoodle48@yahoo.com>
To: "Joseph.Zambelli@NETL.DOE.GOV" <Joseph.Zambelli@NETL.DOE.GOV>
Date: 9/15/2011 10:01 AM
Subject: Kanab Biomass

Dear Mr. Zambelli,

18-01

Although you stated that this was a very intensive EA, I don't think there was near enough back-up evidence on the EA in general, and the economics and Jackson reservoir in particular. Given the contentious nature of this project I feel there needs to be more evidence to support your conclusions. No alternative sites, such as Cedar City or ST George, were look at for comparison on the economic side. And no detailed analysis of the Jackson Reservoir recreation area was done. As for a jail and a land fill already being in the vicinity, adding to an already existing problem is not good science or practice. There is already a movement afoot to move the landfill so as not to pollute the recreation area. Any additional wind born pollution that may be added to an area where children will be playing is not acceptable. This needs to be addressed in detail, not just "no significant impact".

18-02

Thank you
Herb Alexander
Kanab, UT

Responses

Comment 18-01

The subject of this comment has been addressed in the response to comment number 8-01.

Comment 18-02

The subject of this comment pertaining to the Jackson Flat Water Supply Storage Project has been addressed in the response to comment number 13-01. Notably, because the emissions would be very small and concentrations would not exceed the NAAQS, DOE anticipates that there would be negligible to minor impacts on the nearby recreation areas.

Responses

Comment 19-01

The subject of this comment has been addressed in the response to comment number 8-01.

Commenter 19 – Kathy Backus

From: "Dr. Kathy Backus" <kanabvet@kanab.net>
To: <joseph.zambelli@netl.doe.gov>
Date: 9/15/2011 12:17 AM
Subject: coal gasification plant

In addressing the need for this gasification research as a nation and earmarking the project for UT, as a business person, why wouldn't it be the most cost effective to locate the research plant in Sunnyvale, UT? They already have the infrastructure of a train bringing in coal and garbage to the existing gasification plant, they have coal, they have the waste management onsite. Carbon County, Price and Sunnyvale would welcome the addition as they are 80 % job reliance on coal. Leave Kanab as a tourist industry. We are just too remote to explain the cost of getting the input supplies to the gasification and the output waste taken care of. If we are going to use taxpayer dollars for this project, make the project have a remote chance of being profitable by cutting costs on infrastructure and transport. Sunnyvale is extremely economically depressed and would have a larger community benefit potential from the gasification research plant than Kanab. Kanab has other choices for development or support.
Kathy Backus DVM

19-01

20-01

Commenter 20 – Larry Spanne

Joseph Zambelli - Comments on Utah Coal and Biomass Fueled Pilot Plant Project Draft EA

From: "Larry Spanne" <lscoyote@msn.com>
To: "Joseph Zambelli" <joseph.zambelli@netl.doe.gov>
Date: 9/14/2011 3:24 PM
Subject: Comments on Utah Coal and Biomass Fueled Pilot Plant Project Draft EA
CC: "Roger Hoverman" <higgbe@hotmail.com>
Attachments: VirescoDraftEAComments 9-12-11.doc; VirescoDraftEAComments 9-12-11.doc

Dear Mr. Zambelli:

Attached are our comments on the subject Draft EA. We hope you will see fit to extend the comment period by at least two weeks to allow for a full response from the public and especially from the elderly, those of us who have been distracted by family emergencies, and others who are engaging in the environmental review process for the very first time.

Thanks very much for including us in the process.

Sincerely,

Larry and Renae Spanne

Responses

Comment 20-01

DOE received several requests to extend the comment period. DOE believes the scope of DOE's proposed action, the scope of Viresco's proposed project, as well as the magnitude of and level of uncertainty about the potential environmental impacts of the proposed project did not warrant a comment period of more than 30 days. DOE made this decision consistent with 10 CFR §1021.301(d).

DOE informed all individuals and stakeholders that requested additional time that any late comments would be accepted and addressed to the extent practicable. In fact, DOE did receive and has responded to several late comments. Each comment will be entered into the administrative record and considered by DOE.

Commenter 21 – Laurence and Patricia Spanne

Laurence and Patricia Spanne
3915 E. Juniper Cliffs Drive
Kanab, UT 84741-4177

Tel: 435-644-2815
Cell: 805-588-0822
Email: Lscovote@msn.com

September 13, 2011

Mr. Joe Zambelli
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
M/S: B07
PO Box 880
Morgantown, WV 26507-0880

Subject: Utah Coal and Biomass Fueled Pilot Plant Project Draft EA Comments

Dear Mr. Zambelli:

Thank you for the opportunity to comment on the subject project. While the Draft EA clarified some aspects of the Viresco Project, it failed to address many of the issues and questions that were raised in our previous letter of 14 May submitted during the scoping process. We sincerely hope that Final Draft EA is more responsive to our comments.

21-01

First, we still firmly believe that an EIS should be completed for the project solely on the basis of strong local opposition. Furthermore, we feel the draft EA was not completely forthcoming regarding the full range of biomass fuels that have been proposed for use at the facility. Also, we still have no real sense of how many years or decades the facility might be in operation. Both of these points refer to areas of analysis where there may still be potentially significant impacts.

21-02

As we stated previously in our scoping comments of 14 May, we still believe that our residence lies directly downwind from the proposed facility. Consequently, we would be among those potentially most affected by any emissions or releases from the plant. Therefore, it is important that residents in our neighborhood, and elsewhere, know precisely how wind speed and direction are typically distributed from the plant location so we can assess our situation. For that reason we requested that a wind rose be included in the EA—a fairly standard inclusion in documents of this kind. We also requested a calculation on the number of days each year that the Kanab area experiences a condition of atmospheric inversion. This information was not included in the Draft EA. Since our request for this useful and important information was not met, we ask once again that it be included in the next draft.

21-03

The draft document included an analysis of the economic impact of the proposed action and alternatives on the Kanab area, but only emphasized the economic benefits. Again, our comments of 14 May were disregarded. We have spoken with numerous residents who say they

Responses**Comment 21-01**

DOE's decision with respect to the lack of a need for an EIS has been addressed in the response to comment number 12-01. The EA has been revised to clarify that the biomass feedstock will be woody waste from a supplier in Southern Utah. The response to comment number 6-01 addresses the potential future operation of the Pilot Plant.

Comment 21-02

The response to comment number 13-01 addresses the emissions from the proposed Pilot Plant and effects on receptors. A wind rose for Kanab or Kane County was not available from the National Oceanic and Atmospheric Administration (NOAA), the Natural Resources Conservation Service (NRCS), or the Federal Aviation Administration (FAA). Wind roses were obtained from the NRCS for the Cedar City Airport, approximately 55 miles northwest of Kanab, based on data collected in 1961. The wind roses indicate that the prevailing wind direction is from the southwest with secondary wind direction from the north, and tertiary direction from the southeast. In the spring and summer months, winds diminish from the north and increase from the southeast, but southwesterly winds prevail in all seasons. Based on the runway orientation at the Kanab Municipal Airport from southwest to northeast, the prevailing wind directions are believed to be comparable to those in Cedar City. This information has been added to Section 3.5.1 of the Final EA.

With respect to the comment on atmospheric inversions, text has been added to the Final EA in Chapter 4 relating to cumulative impacts explaining that thermal inversions have been known to occur in Kanab. During winter months, the UDAQ issues wood burning alerts through the news media and over the internet when ambient concentrations of PM 2.5 are elevated. Such wood burning alerts have been issued in northern Utah counties, including Salt Lake/Davis, Utah, Weber, and Cache; but state alerts are not issued for Kane County.

Comment 21-03

DOE recognizes the importance of tourism to the economies of Kanab and Kane County as discussed in Section 3.10.1.3 of the Draft EA. The Pilot Plant would be comparable to a relatively modest commercial-industrial facility occupying an acre and a half. But, DOE has no basis for comparison with a similar project located in a community such as Kanab, which is uniquely situated within an hour or two of multiple National Parks and Recreation Areas.

The Draft EA determined that the potential impacts from the proposed Pilot Plant on air quality, water resources, public health/safety, noise, biological resources, materials/wastes, traffic, and utilities would be minor to moderate at most. Although the Pilot Plant would be visible

Commenter 21 – Laurence and Patricia Spanne (con't)**21-03
(cont'd)**

will move out of the area if the pilot facility is approved and begins operation. This could certainly be a significant adverse economic impact. Likewise, prospective residents may reconsider moving to the area, while some tourists and commercial tours may avoid Kanab as a destination or base for overnight or more extended stays. This is likely to result in the loss of many more jobs, income, and revenue than would be gained from operation of the proposed facility. The economic analysis should be expanded to include these real and serious eventualities and provide a more balanced discussion.

21-04

Regarding the issue of environmental justice, the Draft EA clearly indicates that the Kanab is located in a very low-income area compared to the State of Utah and the United States. The lure of a few new jobs, most of which may only be part-time (since the plant is proposed to operate only a limited number of days per year), may tend to override valid concerns about other negative aspects of the project in the minds of the overemployed or underemployed during their time of desperation. This certainly sounds like it could be an environmental justice issue that was not considered in reaching the conclusion of the Draft EA.

21-05

Again in our 14 May scooping comments, we requested that the document disclose the full range of fuels that could conceivably be tested at the proposed facility. Viresco representatives, including Jim Guthrie, were in attendance earlier this year at meetings in Kanab and stated that in addition to coal, used tires, animal waste, municipal refuse, wood products, and other substances may be used as fuel. The impacts of these potential fuel type must be considered. Certainly, there is a potential for Dioxin and other toxic chemicals and substances to be present in the wood products and the other materials. Animal waste might include human waste as well. The discussion on fuels really needs to be broadened to include the above.

21-06

The Alton Coal Mine is proposed as a source of fuel for the plant. The relationship of this mine to the project along with additional impacts in the area of the mine should be more fully addressed. This becomes more of a significant factor if the operation of the pilot facility is extended over many years or even decades. The issue of life expectancy of the Kanab plant is scarcely addressed in the Draft EA, nor is its possible conversion to a power generation facility at in the future. These possibilities open the door to potential significant adverse effects beyond the 30-day operational period upon which most of the Draft EA discussion is currently based.

21-07

Finally, we were also disappointed that there was no analysis or mention of locating the subject facility in a more remote area. Many persons who oppose location of the plant in Kanab are not necessarily opposed to the concept of coal gasification and would support a pilot plant sited in another suitable but more remote location. Having to choose between the Kanab site or no project at all unreasonably limits the discussion and analysis.

Thank you very much for considering our comments.

Yours sincerely,

Signed—Signature will be provided upon request.

Laurence and Patricia Spanne

Responses**Comment 21-03 (continued)**

from US 89A and from nearby residences, Kanab Creek Ranchos, and other elevated locations, the facility would have an effect on the viewshed comparable to that of other nearby facilities, including the airport, the Kane County Public Safety Facility, and the Kane County Landfill, as illustrated in revised Figure 3-6 of the Final EA (now Figure 3-7). The city has identified the area east of the Kanab Municipal Airport as an appropriate area for potential similar development because of the proximity to other commercial-governmental uses, and because the area is distant from and not visible from the downtown area where tourists find lodging and dining establishments; nor would the facility be visible from downtown Fredonia. Because the proposed Pilot Plant would not have significant adverse impacts on environmental resources, DOE concluded that there is no basis for anticipating significant impacts on tourism or the local economy.

Comment 21-04

In Section 3.10.1.4, Environmental Justice, and Table 3.10-4, the Draft EA demonstrated that the project vicinity and the City of Kanab do not have poverty rates higher than the county, state, and national levels. Therefore, the EA found no basis for potential environmental justice impacts from the project.

Comment 21-05

The subject of this comment has been addressed in the response to comment number 6-09. Woody waste would not include human or animal wastes.

Comment 21-06

CEQ's NEPA regulations, 40 CFR § 1508.25(a)(1), define "connected actions" as actions that are "closely related and therefore should be discussed in the same impact statement." Section 1508 further identifies three factors for determining connected actions. 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; [or] (iii) Are interdependent parts of a larger action and depend on the larger action for their justification." Applying this definition, DOE does not believe that the operation of the Alton Mine, identified in the EA as a potential source of coal for the proposed Pilot Plant, constitutes a connected action, because the Pilot Plant would not depend on the mine as a sole source for operation and the amount of coal purchased for use in the proposed Pilot Plant (650 tons) would be an insignificant portion of the total annual sales from this coal mine.

Comment 21-07

The subject of this comment has been addressed in the response to comment number 8-01.

22-01

Commenter 22 – Mary Boisseau

Joseph Zambelli - DOE: COMMENT in regard toDOE/EA 1870D for Utah Coal & Biomass Fueled Pilot Plant

From: "Mary B." <mary_von@comcast.net>
To: <Joseph.Zambelli@NETL.DOE.GOV>
Date: 9/14/2011 7:13 PM
Subject: DOE: COMMENT in regard toDOE/EA 1870D for Utah Coal & Biomass Fueled Pilot Plant

Mr. Joseph Zambelli
NEPA Document Manager
DOE-NETL, M/A: B07
Morgantown, West Virginia

Regarding DOE/EA 1870D

Dear Mr. Zambelli:

Regarding the proposed pilot plant, to be situated in Kanab, Utah, my comment is 100% NO!

While I appreciate the need for such experimental facilities, a small town (less than 4,000 inhabitants), a tourist town, a retirement destination, a "dark skies" clean air area, a town with the look and feel of pre-industrial America, a town without any major sources of air, noise, or water pollution IS NOT THE RIGHT PLACE TO LOCATE SUCH A FACILITY.

Economic impacts are probably not part of what you're looking at, but, even in *that* regard, Kanab is NOT the place. This facility will NOT generate jobs, and will only leave the City of Kanab "holding the bag" on clean-up of any contaminants -- plus a useless building. Meanwhile, the smoke and the site-sore of the stack will only *detract* from one of the main-stays of the local economy, namely, tourism.

This part of the country would perhaps make for good testing areas for wind or solar energy projects. Other nearby communities (such as Page, AZ) would be far more suitable for this pilot plant.

My sister and I purchased two small cottages in Kanab about ten years ago. If this plant gets approved and is built, we will no longer consider Kanab the place to retire and, sadly, re-start a search for a similarly beautiful, quiet, clean small town.

Again, please do NOT approve the destruction of one of the last truly wonderful small towns in the United States.

Thank you.

Mary Boisseau
Avery Champion
Kanab, Utah

Responses

Comment 22-01

The subjects of this comment have been addressed in response to comment numbers 8-01 (alternative locations), 4-01 (decommissioning and restoration), and 21-03 (tourism). Economic Impacts are discussed in Sections 3.10.1.3 and 3.10.2.3.

Commenter 23 – Peter Bauer

Joseph Zambelli - Kanab

From: <Peterbauer8@aol.com>
To: <joseph.zambelli@netl.doe.gov>
Date: 9/4/2011 3:04 PM
Subject: Kanab

Mr. Zambelli

There has not been enough time to adequately review and evaluate the DOE report concerning the proposed coal gasification plant in Kanab. There is no reason to fast track this project. Please allow the time needed for the concerned citizens to do so.

We have a verified petition by almost one third of the total voters asking for an ordinance to stop this project and are awaiting a vote by the towns citizens. There are hundreds of signs in yards and businesses asking not to build the plant. A large majority of the business owners have signed a petition saying NO to the plant.

I am asking you to do the same. Give the people of Kanab a chance to vote on this important matter.

Peter Bauer
1569 S. Escalante Dr.
Kanab, Ut. 84741

23-01

Responses

Comment 23-01

Comment noted.

Commenter 24 – Critter Corner

Joseph Zambelli - Utah Coal and Biomass Fueled Pilot Plant (DOE/E-1870)

From: "Critter Corner" <info@crittercornerpetsupply.com>
To: <joseph.zambelli@netl.doe.gov>
Date: 9/15/2011 1:20 PM
Subject: Utah Coal and Biomass Fueled Pilot Plant (DOE/E-1870)

Dear Joe Zambelli,

Once again I write to you regarding this project planned for Kanab, UT. Thank you for coming here again to give us an opportunity to comment on the draft EA. I wish there had been a more thorough job done on the draft EA and I also wish we had more time to make our comments (several people have requested an extension period) but we don't. Most of us have businesses or jobs and families and multiple responsibilities so we do not have a lot of time to research information which we expected the draft writers would do, but obviously since I feel they haven't been thorough in their work, I would request the DOE take this project to the next level and complete a full EIS report.

While I won't be able to provide a lot of "facts" with these comments....I still hope you will take these concerns more seriously than I feel our previous concerns were taken. You are already aware of the tremendous controversy here in Kanab surrounding this project. We have an election in November which could have significant impact on this project moving forward as well as a completed citizen's initiative that will be going to a vote of the people and could reject this project completely.

If you commented during the earlier scoping period (May and June), drag those comments out and determine if DOE addressed them in their analysis. If not state that you believe they did not address them and insist that they do (but be sure comments really are within the scope of the project before you complain).

1.0 PURPOSE AND NEED:

The Purpose and Need to pursue this type of research, nationally, is agreed. However, the **need** to site this plant, specifically, in Kanab is not demonstrated. Say why you think so and what DOE should do to fix this.

2.0 ALTERNATIVES:

Why wasn't an alternative location analyzed? The Congressional earmark language only specifies the State of Utah. I do not accept DOE's rationale the Proposed Action and the No Action constitute a "reasonable range of alternatives". Explain why?

2.7.5 DECOMMISSIONING

"The Pilot Plant would be decommissioned and the site restored no later than the end of the site lease period."

What does decommissioned mean exactly? Would all the structural components of the plant be dismantled and removed from the site?

3.0 EXISTING CONDITIONS AND ENVIRONMENTAL CONSEQUENCES

Responses

Comment 24-01

The subject of this comment has been addressed in the response to comment number 8-01.

Comment 24-02

The subject of this comment has been addressed in the response to comment number 8-01.

Comment 24-03

Section 2.7.5 of the Final EA was revised to include a discussion on specific decommissioning and site restoration activities that would occur in accordance with Viresco's lease with SITLA. Under the terms of the cooperative agreement, Viresco's lease agreement with SITLA must be executed prior to release of DOE funds for the project, and Viresco would be responsible for all decontamination, decommissioning and cleanup activities or any costs related to these activities.

Commenter 24 – Critter Corner (continued)

Ask that DOE demonstrate an analysis occurred. Evaluative statements are made without making a direct (or disclosure, if indirect) connection with the analysis performed and at what scale.

24-04

3.10 SOCIO-ECONOMICS:

DOE demonstrated a preconceived notion leading to a Finding of No Significant Impact instead of being unbiased, fair and balanced in evaluation of effects. This is illustrated in the verbage used on page 54, 4th paragraph. "Process water from the Pilot Plant will be recycled..... process wastewater will have no impact to the City of Kanab's wastewater system." [Emphasis is mine.]

24-05

4.0 CUMULATIVE IMPACTS:

- 4.2.1 Land Use: "Construction and operation of the proposed project in combination with the Kane County Public Safety Facility **could** adversely impact uses of recreational areas associated with the Jackson Flat Water Supply Storage Project."

- This is not an analytical statement and not sufficient to adequately disclose potential impact(s).

24-06

- 4.2.2 Aesthetics: "Construction and operation of the proposed project in combination with the Kane County Public Safety Facility **could** adversely impact views from the recreational areas associated with the Jackson Flat Water Supply Storage Project and, to a lesser extent, residences to the northwest of the Pilot Plant site." This is not an analytical statement and not sufficient to adequately disclose potential impact(s).

24-07

- 4.2.4 Cultural Resources: "If any human remains are discovered, then such a discovery **could** be viewed as a cumulative impact of the projects." I ask you when would disturbance of a burial not be considered an impact, cumulative or otherwise?

This is not an analytical statement and not sufficient to adequately disclose potential impact(s).

- 4.2.4 Cultural Resources: "The discovery of prehistoric human remains at an archaeological site investigated during the course of the Jackson Flat Water Supply Storage project, however, has heightened concerns among the Kaibab Band of Paiute Indians that human remains may be encountered during construction for the present project." What does the consulting archeologist and SHPO have to say on the likelihood of discovering human remains if excavation for this project were to occur?

5.2 Irreversible or Irretrievable Commitment of Resources

24-08

"Water resources used by the Pilot Plant would be treated and recycled in the process for reuse under the DOE cooperative agreement for 30 days of operation or possibly returned to the environment through an evaporation pond under future operations."

Facility Processes and Equipment (Section 2.7.2.) makes no mention of an evaporation

Responses**Comment 24-04**

Comment noted. The use of "will be" and "will have" when discussing the proposed action was not intended to imply that DOE has already reached a decision with respect to the proposed action. However, DOE agrees that the use of the terms "would be" and "would have" is more appropriate and the Final EA has been changed to use these terms.

Comment 24-05

Section 4.2.1, Land Use, of the Draft EA stated DOE's conclusion that the proposed Pilot Plant in combination with the Kane County Public Safety Facility (already under construction) could adversely affect recreational uses of the Jackson Flat Water Supply Storage Project. Although not a quantitative analytical statement, this statement represents a qualitative analysis, which is appropriate under NEPA when potential impacts cannot be adequately quantified. In Section 3.1.2, the Draft EA noted that the use of the proposed site for an industrial facility would not be considered compatible with recreational areas because of diminished aesthetic quality. However, the section also pointed out that the Kanab City Planning and Zoning Department approved the zoning change for the site to support an industrial facility, that plans for recreational facilities associated with the Jackson Flat Project are currently conceptual, and that the Planning and Zoning Department is aware of the respective projects and can plan future land uses in the area accordingly.

Comment 24-06

Though not a quantitative statement, the statement describes potential impacts on views from recreational areas associated with the Jackson Flat Water Supply Storage Project qualitatively. "Aesthetics" is not a resource that readily lends itself to quantitative impacts, particularly when considering visibility of structures by individuals. With respect to cumulative impacts, the EA states that both the Kane County Public Safety Facility and the Pilot Plant may be visible from potential recreation areas depending upon their locations at the Jackson Flat site. Some individuals would consider the visibility of these manmade features to be more of an impact on their aesthetic appreciation of the recreation areas than others would.

Comment 24-07

DOE believes that the Draft EA adequately considered the potential for cumulative impacts from the discovery of Native American remains in the project vicinity. In Section 3.4.1, the Draft EA acknowledged that the proposed Pilot Plant site is within 0.25 mile of the Jackson Flat Water Supply Storage Project where Native American remains were inadvertently discovered during ground excavation on a much larger land area. The Draft EA in Section 3.4.2 also noted that no Native American

Commenter 24 – Critter Corner (continued)**24-08
(con't)**

pond; no evaporation pond is discernable in Figure 2-3. Please explain what is meant by "returned to the environment". Would this effluent truly be left to evaporate in a pond?

Temporal Analysis of effects is inadequate:

DOE's intention is to only be involved with this project out to the 30 operation-day per year mark, as per a cooperative agreement with the proponent. However, DOE is fully aware the proponent intends to achieve a 130 operation-day mark and DOE acknowledges this in EA section 2.8: Consideration of Connected Actions.

24-09

Nowhere in the EA have I discovered a projection (time frame) of how many years the plant would likely be operated to achieve the 130 operation-day mark or even the 30 operation-day mark. Therefore this environmental assessment is deficient in making full disclosure of what actions are intended as required by NEPA and its implementing CEQ regulations. Please correct this deficiency.

Responses**Comment 24-07 (continued)**

remains were encountered during construction of the Kane County Public Safety Facility, which is located on a larger site approximately 0.5 mile from the proposed Pilot Plant site and situated along the same topographic feature in similar proximity to the Jackson Flat Project. Based on its survey completed for SITLA in October 2010, Bighorn Archaeological Consultants, LLC concluded that discovery of additional archaeological remains during Pilot Plant construction or operations would be unlikely.

DOE's consultation with the SHPO is documented in Appendix A1. DOE's consultation with Native American tribes in the region as documented in Appendix A2. Sections 1.4 and 3.4.2 of the EA discuss coordination with Native American tribes and what actions and precautions would be taken in the event that cultural resources, artifacts, human remains, or burial sites would be discovered during construction of the Pilot Plant.

The subject of this comment has also been addressed in the response to comment number 34-07.

Comment 24-08

Section 2.7.2 and Figure 2-4 cover Viresco's operational plans as implemented under the proposed action (30-day); Section 2.8 discusses operational plans considered under the connected action (130-day maximum). See response to comment number 39-04 regarding the statement "returned to the environment."

Comment 24-09

The subject of this comment has been addressed in the response to comment number 6-01. The timeframe of future operations of the proposed Pilot Plant is predicated upon by the availability of future funding and acquisition of necessary permits.

Commenter 25 – William Dale

Joseph Zambelli - gasification plant in Kanab, Utah

From: "OC Dale" <oc@xpressweb.com>
To: <joseph.zambelli@netl.doe.gov>
Date: 9/15/2011 12:07 PM
Subject: gasification plant in Kanab, Utah

Dear Sir-

We would prefer not to have an ugly, stinking, air fouling, water polluting, detrimental, animal killing, and human killing. Tourist unfriendly, hazardous, unsightly and unhealthy gasification plant in Kanab, Utah. It makes no sense at all. It's time we, the people, take responsibility for taking care of our vanishing water and what's left of our precious lands.

I sincerely you guides us the proper way.

Thank you-

William O. Dale

25-01

Responses

Comment 25-01

Comment noted.

Commenter 26 – Anonymous

September 15, 2011

Mr. Joseph Zambelli, NEPA Documents Manager Joseph.Zambelli@NETL.DOE.GOV
 U.S. DOE – National Energy Technology Laboratory
 3610 Collins Ferry Road
 P.O. Box 880, Morgantown, WV 26507-0880

Dear Mr. Zambelli:

I and my family are residents of Kanab, Utah. We have lived here for ten years and are stakeholders in this community. I believe we will be harmed due to numerous reasons, including reduction in health, air, soil and water pollution, quality of life, and economically by the inappropriate and precedent setting construction of this experimental coal plant in our city.

Here are particular concerns that I have:

- 26-01** 1 I do not believe that my concerns submitted during the Scoping process were adequately addressed in the EA.
- 26-02** 2 1.0 Purpose and Need. There is no compelling “need” to site an industrial plant, this proposed coal gasification plant, in Kanab, Utah. There is nothing in the EA that demonstrates this is the best location to build such a facility. Kanab has no such industrial facilities at the present time, it has no infrastructure such as a railway hub or interstate highway, and no provision for emergency services should an accident occur. Placing an industrial plant like this in our rural community that is primarily based upon a tourism economy is negatively precedent setting. DOE should evaluate other more appropriate locations that have these specific provisions before deciding upon Kanab, Utah.
- 26-03** 3 2.0 Alternatives. It is unacceptable that DOE did not evaluate other locations for this coal gasification plant. DOE’s rationale in the Proposed Action and No Action alternatives DO NOT constitute a reasonable range of alternatives. The EA is not adequate in its evaluation. Why does the Congressional earmark only specify the State of Utah – these are federal tax dollars and a range of alternative locations should be evaluated. Other locations that already have industrial facilities, transportation infrastructure, utilities, and emergency services should be evaluated and cost comparisons provided.
- 26-04** 4 2.7.5 Decommissioning. It is not clear what the term “decommission” means. If the grantee (Viresco) goes bankrupt, will our small town be responsible for this industrial facility and all of the problems that it could create. Kanab has a very small tax base to deal with such issues.
- 26-05** 5 3.0 Existing Cond. & Env. Conseq. You do not show that you conducted an adequate analysis. You make statements that cannot be substantiated, as there are no data to show what analysis you performed and at what scale. It appears the EA has “boilerplate” language often found in EAs and environmental documents. This is unacceptable. The analysis should be in the document and specific to this project proposed for Kanab, UT.

Responses**Comment 26-01**

Comment noted.

Comment 26-02

As stated in response to comment number 8-01, DOE initiated a financial assistance award for Viresco’s Pilot Plant project to satisfy a Fiscal Year 2010 Congressional earmark created by Senator Bennett for a "Coal and Biomass to Fuel Pilot Plant." In accordance with the earmark, DOE and Viresco Energy, LLC signed a cooperative agreement (DE-FE0002945) that would provide \$2,404,000 using appropriations under the line item for Fossil Energy Research and Development as found in Public Law 111-85 and the Energy and Water Conference Report 111- 278.

DOE did not select this project under either a competitive or a non-competitive procurement and had no role in enacting this earmark. As the agency administering the financial assistance at the direction of Congress, DOE must comply with NEPA by assessing the potential environmental impacts associated with the proposed project and by considering the potential impacts. DOE has no regulatory jurisdiction regarding the project. However, DOE may consider additional mitigation imposed as a condition of its final NEPA decision.

NEPA requires that agencies evaluate reasonable alternatives to its proposed action. The purpose and need for agency action determines the range of reasonable alternatives. In this case, the purpose and need for DOE’s proposed action is to comply with the Congressional earmark. The earmark calls for DOE to grant financial assistance for the project as proposed. Given that Congress earmarked funding for this particular project, the range of reasonable alternatives for DOE’s consideration is the project as proposed by Viresco, any alternatives still under consideration by Viresco or that are reasonable within the confines of the project as proposed, and a no action alternative.

Viresco had already selected the technology for the project before the earmark was enacted. Viresco has not identified alternative sites, technologies or utilities other than those addressed in the EA. Alternatives still under consideration by Viresco or reasonably within the confines of the project as proposed have been evaluated in the EA, along with the no action alternative.

The response to comment number 21-03 addresses the subject of tourism.

Comment 26-03

The subject of this comment has been addressed in the response to comment number 8-01.

Commenter 26 – Anonymous (continued)

- 26-06** 6 3.10 Socio-Economic Analysis. The FONSI was preconceived and not based upon facts. For example, the EA states that process water will be recycled and have no impact to the City of Kanab's wastewater. In fact, without knowing exactly what the pollutants that will be in the wastewater, or the effects on the sewage treatment plant, you do not know that the wastewater will have no impact. In fact, it likely will have seriously detrimental effects, and it is also likely that the project proponent will have no liability to restore our sewage treatment plant if it is compromised.
- 26-07** 7 4.0 Cumulative Impacts. The EA does not adequately address BOTH cumulative and connected effects. You should address the connected and cumulative effect of other Federal actions that are simultaneously occurring in the region. A coal mine near Alton, UT is proposed, and in the EIS stage at this time. The negative health and economic effects of these two Federal projects to the region and its population must be evaluated. Each project will increase the negative effects on our health and on the environment. This region is over 90% public land, set aside as national parks, monuments and forests. In particular, Grand Staircase-Escalante National Monument - the first national monument in the National Landscape Conservation System, established in 1996 - is adjacent to Kanab and due northwest of the plant - directly in the path of air pollution from the facility. Recreation is a significant economic driver in our community and region [note socioeconomic studies conducted by the Sonoran Institute], and such a facility, with smokestacks, offensive and noxious odors, air and water pollution, will deter visitors and tour companies from visiting our community.
- 26-08** There are few analytical statements, facts, or data associated with this section. The narrative does not disclose potential impacts. For example, 4.2.1 notes the project in combination with our jail could adversely affect recreational use of the Jackson Flat Reservoir. City, county and state officials assured us that recreation was a significant use of this reservoir. Exactly what is the adverse impact? It is not detailed. In 4.2.2, Aesthetics, it is noted that this project could adversely impact views from recreation areas at the reservoir and residences in the vicinity. Again, the EA does not adequately disclose the extent or details of this impact. In 4.2.4 Cultural Resources, the EA notes that discovery of human remains "could" be viewed as an impact. I disagree - it WOULD be an impact, and likelihood is high as noted during the excavations of nearby Jackson Flat Reservoir. Significant Ancestral Puebloan archaeological remains and structures were found there. Where are comments/analysis from the Utah SHPO and consulting archaeologist regarding the likelihood of such discoveries?
- 26-09**
- 26-10** The EA must fully describe the affected environment and impact indicators in a quantifiable manner, with sufficient detail to serve as a baseline against which to measure the potential effects of implementing the action of granting funds to allow construction, operation, and decommissioning of the experimental pilot facility in Kanab, UT. There are currently no baseline studies completed – baseline studies should be a part of the project to determine variance to current conditions.
- There is not an adequate analysis and description of both direct and indirect effects of the proposed action and alternatives on the quality of our human environment, as well as residual effects after mitigation. I believe there will be indirect effects that will induce negative undesirable changes in the patterns of land use, reduced recreational visitation, negative effects on air, water, and other natural systems, including the ecosystem, and reduced home ownership due to fewer people buying and selling homes here because of the change from recreation/tourism/conservation/protection (RTCP) paradigm as the primary economic driver in our community to this industrial application. A change from RTCP to industrial is precedent setting – a radical and upsetting change to our community and region.

Responses

- Comment 26-04**
The subject of this comment has been addressed in the response to comment number 24-03.
- Comment 26-05**
Comment noted.
- Comment 26-06**
The subject of this comment has been addressed in the response to comment number 9-01.
- Comment 26-07**
The subject of this comment has been addressed in the response to comment number 6-01. The response to comment number 21-06 addressed the consideration of the Alton Mine in the EA. The EA addresses cumulative impacts in Chapter 4.
- Comment 26-08**
The subject of this comment has been addressed in the response to comment number 24-06.
- Comment 26-09**
The subject of this comment has been addressed in the response to comment number 24-07.
- Comment 26-10**
The CEQ NEPA regulations recognize the need to express impacts in qualitative terms when quantitative measurements are either not available or not meaningful for comparative analysis. DOE has added definitions for impacts to Section 3.0 of the Final EA described as beneficial, negligible, minor, moderate, and substantial. The response to comment number 21-03 addresses the potential for impacts on tourism. With respect to the potential effects on property values, DOE is not aware of any firm basis on which to analyze the potential impact of construction and operation of a pilot scale research facility on housing prices. There is evidence that construction of a full-scale power plant (greater than 100 megawatts capacity) could affect local real estate values (Davis, 2010). However, the study results are not relevant due to the difference in scale compared to the proposed Pilot Plant, which would occupy approximately 1.5 acres of land, consume 5 tons of coal per day of operation, and be exempt from a state air permit.

Commenter 26 – Anonymous (continued)

- 26-11 8 5.2 Irreversible/Irretrievable Commitment of Resources. The discussion about treatment and recycling of water used by the Pilot plant is not substantiated in the EA. In 2.7.2 there is no detailed discussion of an evaporation pond, nor is it shown in Figure 2-3. Explain exactly how the water will be "returned to the environment." There should be modeling and predictive analysis of the outputs and environmental effects of such a facility that are used in other gas plants that will be used here. Leaving the process ambiguous is not acceptable.
- 26-12 9 Time frame. No calendar or time frame is clearly described to show how long it will take to achieve the proponents' 130 operation day mark. DOE states involvement intention only to the 30-day mark, through cooperative agreement. In 2.8, DOE acknowledges proponent's intention for 130 operation days. The EA must state how long the City of Kanab and residents will be subjected to testing; effects could vary depending upon how long the project operates. The EA is not adequate in providing full disclosure on this item, therefore violating the intent of NEPA.
- 26-13 10 The EA does not adequately address mitigation and monitoring in detail for this facility. A representative of the Utah State Department of Environmental Quality advised us they do not have funds, staff, or capacity to monitor effects of this facility. Therefore, DOE should require this be done with grant funds. As such, grant amount seems inadequate to provide for planning, design, construction, operation, mitigation, monitoring, clean up and facility dismantling, HazMat and accident coverage.
- 26-14 11 Request an EIS. Due to the substantial amount of controversy generated, in keeping with intent of NEPA, I request that an EIS be completed for this project to provide opportunity to mitigate adverse effects by developing alternative locations for the site. I dispute the lack of data and rationale and state there WILL be detrimental effects to human health and safety. Therefore, DOE is obligated to conduct an EIS; the FONSI is flawed and inadequate.
- Many citizens in Kanab, UT (over seven hundred signed a citizens initiative petition) disagree with and dispute the proposed action of a coal gas plant in Kanab, UT; this is a large percentage of the citizenry. Citizens have asked for the right to vote on this plant; the City of Kanab is stalling, which may not allow us to vote in the upcoming November election. The City is refusing our most basic American right, and as such, citizens of Kanab continue to employ lawyers to oppose this project, all paid for by citizens of this economically depressed community. It was enough that the citizens of Utah were experimental guinea pigs during the nuclear testing fiasco of the 1960's and 70's. Many have resultant cancers or have relatives that died.
- I believe there will be toxic by-products detrimental to our health, such as mercury, benzene, and coal dust. Just because we have clean air and Utah has lower air and water quality requirements than other states, does not mean that you should set a precedent by polluting our air, water, soil, and sewage ponds. Do not allow this to occur in ANY location without adequate mitigation and safety parameters met. The fact that Utah has clean air and less restrictive pollution standards than other locations in the U.S. is not a reason to site a plant in Kanab, UT.
- In conclusion, with the economic crisis our nation is saddled with, I respectfully request that this grant be terminated. The obligated funds should be returned to the U.S. Treasury or used to fund alternative energy R&D as noted in numerous speeches and articles by Secretary Chu. DOE should be encouraging clean energy development, including more solar, wind, algae, and other alternative energy R&D. Coal is a regressive technology, and absurd to subsidize in a region like Kanab where wind and sun are

Responses**Comment 26-11**

The subject of this comment has been addressed in the response to comment number 39-04. See also response to comment number 56-15, which discusses water demand and Viresco's plans to manage the process wastewater.

Comment 26-12

The subject of this comment has been addressed in the response to comment number 6-01. The timeframe of future operations of the proposed Pilot Plant is predicated upon by the availability of future funding and acquisition of necessary permits.

Comment 26-13

As described in response to comment number 15-04, Viresco would be required to operate the facility in compliance with all applicable federal, state, and local laws, regulations, and ordinances as would be the case for all comparable commercial and industrial facilities. Respective regulations would require the maintenance of data and may require the submission of reports to demonstrate compliance, and the Pilot Plant would be subject to inspection by state regulators. DOE will determine whether a mitigation action plan is warranted and describe appropriate mitigation commitments in the final decision document for the proposed action. As stated in response to comment number 24-03, Section 2.7.5 was revised to include a discussion of specific decommissioning activities that would occur.

Comment 26-14

The subjects of this comment have been addressed in the responses to comment numbers 12-01 (request for an EIS) and 13-01 (air emissions and public health effects). Other comments noted.

Commenter 26 – Anonymous (continued)

26-14 (cont'd) | prevalent. Personally, I have respiratory health issues, and this kind of energy development will negatively affect my health.

26-15 | The character of Kanab and Kane County is rural, natural, and recreational. This plant when cumulatively evaluated with the proposed Alton Coal Strip Mine, new reservoir, and proposed Lake Powell Pipeline may encourage a larger coal power plant near this test facility that would have even more significant negative cumulative effects to human health and safety.

Responses

Comment 26-15

Comment noted. See Chapter 4 for the cumulative impacts discussions. The possibility of siting a coal-fired power plant in the area is not reasonably foreseeable and therefore is not included in the cumulative impacts section.

Commenter 27 – Anonymous

Utah Coal and Biomass Fueled
Pilot Plant EA

Public Hearing Comment

27-01

I would like to keep my name and contact information in this document kept private and confidential in this Department of Energy public comment concerning Viresco Coal and Biomass Fueled Pilot Plant in Kanab City Utah.

One of my first concerns is what this project is going to do to both the local economic environment of Kanab City and surrounding rural UT and Northern AZ communities considering their tourist and retirement orientations. Not only the changes to the areas environmental quality due to plant operations, but the increase of industrial traffic both heavy equipment on both coal mine and plant sites but tractor-trailer increases between both site on for the most part rural and scenic two lane highways. People travel from around the country and the world seeking peace and relaxation whether on holiday or in retirement. Along with an increase to vehicular air pollution, the possibility of an increase of highway accidents involving hazardous materials to and from the plant and mine, not to mention personal risks to life and limb.

27-02

Secondly I am concerned with both local water use and regional air quality. Utah is the second driest state in the union and third worst as far as air quality (some recent ratings a worst air quality in the U.S.). Kanab and the vicinity has a very limited water supply especially city/potable water and can vary from year to year and in my opinion too valuable a resource to squander on this endeavor. Will the water used by Viresco still be potable with Kanab's pre-existing water treatment facilities. In DOE document "Utah Biomass and Coal Draft EA 08-2011" it states no surface water is on site but what of the Jackson Flat Reservoir that is referred to in the above document as "Jackson Flat Water Supply Storage Project" under construction just ¼ mile to the north.

27-03

As far as I understand with coal gasification uses steam to extract/convert the coal and biomass to extract either a cleaner combustible gas or liquid fuel. The toxins and hazardous materials are filter out through charcoal or sand. Is this really cleaner or just changing the form of the hazardous materials of a fossil fuel. Alternative fuel? Or just an alternative process to a fossil fuel we the United States (and the world) should have been moving away from for the last thirty years, or at least conserving. John F. Kennedy proclaimed to put man on the moon within ten years, why after thirty years of realizing the hazards of fossil fuels are we still messing with this stuff. Coal gasification is not a new process this country has been doing it for over a hundred year in almost as many varying processes. How is this plant in Kanab UT going to help better our dependency on or even get away from fossil fuel. Or are Jim Guthrie and Viresco using loop holes in Department of Energy policies to:

27-04

1. Get federal subsidies to develop yet another variation to already a known technology.
2. Developing a smaller scale plant to process a small coal field to avoid cost and regulations of processing this resource through existing regulations by calling it experimental or alternative.
3. Bring/import non regional/local waste/s/biomass if local resources are deemed insufficient.
4. Avoid clean-up and restoration costs encase of an industrial accident or company failure.

27-05

In the last several years of living in this area I have seen our air quality and range of visibility erode horribly. Haze and atmospheric conditions obscuring horizons 20-30 miles away occurring a few a year several years ago, now since April of 2011 are not almost a daily occurrences but vistas within several miles are becoming obscured with the same frequency. I can't see adding more carbon monoxide and other air born pollutants in to the area's air as helping this matter. The ability of Viresco to store up to 40 tons of Coal is disturbing especially under the hot southwest sun. Are the gaseous releases from this coal stock going to be monitored or controlled in anyway. I know being upwind of these fumes would make me physically ill.

What is the urgency on this plant? As far as I understand Kanab and area residents were first informed

Responses**Comment 27-01**

The subjects of this comment have been addressed in the responses to comment numbers 21-03 (tourism), 26-10 (property values), 15-12 (truck traffic), and 43-07 (accidents).

Comment 27-02

The subjects of this comment have been addressed in the responses to comment numbers 9-01, 15-05, 15-21, 41-05, 57-12, and 63-08.

Comment 27-03

The subject of this comment has been addressed in the response to comment numbers 54-10.

Comment 27-04

The subjects of this comment have been addressed in the responses to comment numbers 15-04, and 26-13. As stated in Section 1.2 of the EA, "This project supports NETL's goal of developing and using domestic coal and renewable resources in an efficient and environmentally acceptable manner."

Comment 27-05

The subject of this comment has been addressed in the response to comment number 13-01. Pre-pulverized coal would be delivered to the Pilot Plant in bags during the 30-day demonstration. The analysis of the connected action in the Final EA was expanded to include a review of the preprocessing (i.e. pulverization) of coal on site during the 130 days of operation and included in the emission estimations (see Section 3.5.2.1 of the Final EA). The total fugitive particulate emissions were estimated to be 0.74 lbs for a 130-day period.

Commenter 27 – Anonymous

27-06

of this project May of 2011 and according to your document "Utah_Biomass_and_Coal_Draft_EA_08-2011" the plant is suppose to be operating by the Spring of 2012 (Page 12 Operation 2.7)? The Fischer-Tropsch process (only 25 – 50% efficient) has been around since the 1920's and has not revolutionize the energy industry yet, so what's the rush? Where's the benefit to the world and Kanab UT other than a select few involved in this project?

27-07

To realize some fresh water, our most precious resource can be wasted in a processing of a non renewable energy supply.

May I suggest that Viresco change the "Y" in there patented process with an "I"

Responses

Comment 27-06

The subject of this comment has been addressed in the response to comment number 8-01.

Comment 27-07

Comment noted.

Commenter 28 – Byard Kershaw

September 15, 2011

Joseph Zambelli
 US Department of Energy
 National Energy Technology Laboratory
 3610 Collins Ferry Road
 M/S 807
 PO Box 880
 Morgantown, WV 26507-0880
 Email: joseph.zambelli@netl.doe.gov

Dear Mr. Zambelli:

Below are my comments on the Draft EA for the Viresco Energy, LLC Utah Coal and Biomass Fueled Pilot Plant Project in Kanab, UT.

General Comments:

- 28-01** Viresco should have a contingency plan for both man-caused and natural hazards. MSDS sheets should be available at the site for all chemicals brought to and contained on-site.
- 28-02** While this proposed project has stirred up a lot of controversy in the community, I find the concept of the plant exciting. I don't think that there is anything about the proposal that can't be overcome with proper analysis. The effects of the construction and operation of this plant have been exaggerated by some in the community, such as we will be left with a Superfund site, and comparing the plant's operation to a full-blown coal-fired electric generating plant. I have also thought that Viresco should have been more forthcoming in the proposal from the beginning. But overall, I have no objection to the plant being constructed and operated in Kanab.
- 28-03** Page 11, Section 2.5.2 Project Site, second paragraph – The road to the Kane County landfill is now paved. It would be helpful if Viresco would agree to contribute to the maintenance and repair of the road.
- 28-04** Page 15, Section 2.7.1 Materials Required – Please describe the methods that will be used for dust control for the delivery and storage of the coal/biomass and sand?
- 28-05** Page 18, Syngas Flare and Removal of Ash and Fines, first paragraph - If the solid waste is determined to be hazardous or toxic waste, where is the licensed hazardous or toxic waste landfill that will receive the waste? There is a perception in Kanab that hazardous/toxic waste will be disposed of at the Kane County landfill.
- 28-06** Page 18, Syngas Flare and Removal of Ash and Fines, first paragraph - Will scale inhibitors or algaecides be used in the cooling towers or the component of the plant from which the blowdown water will be removed? If so, how will the blowdown water be contained? Lined or enclosed ponds? How will the ponds be made unavailable for access by humans or wildlife. Lined, fenced, netted? While there will likely be water to attract birds and other wildlife at the Jackson Flat Reservoir, any standing water will attract birds and other wildlife.

Responses**Comment 28-01**

The Pilot Plant will have a Contingency Plan in place and material safety data sheets (MSDSs) will be onsite for all materials stored and used at the plant.

Comment 28-02

Comment noted.

Comment 28-03

Comment noted.

Comment 28-04

Viresco would use appropriate handling and storage methods for ash, biomass and sand to control dust and prevent it from blowing offsite. For ash, these methods typically involve keeping the ash wet or encapsulating the ash with a cover. For biomass and sand, control methods would likely include covering the storage areas.

Comment 28-05

The subject of this comment has been addressed in the response to comment number 15-09.

Comment 28-06

The subject of the comment regarding the handling of process wastewater, including the evaporation pond, has been addressed in the response to comment number 56-15.

Commenter 28 – Byard Kershaw (continued)

- 28-07** Page 18, Section 2.7.3 Products and Waste Generated, second paragraph - Same question as above.. Where will toxic or hazardous waste be disposed of?
- 28-08** Page 18, Section 2.7.3 Products and Waste Generated, second paragraph - Same question as above. How will waste water be contained and made inaccessible to humans and wildlife?
- 28-08** Page 19, Section 2.7.3 Products and Waste Generated , second paragraph - Will scrubbers be used on the stacks? If so, make a statement to that affect. If not, have a discussion of why they are not being used.
- 28-09** Page 19, Section 2.7.6 Permits, Regulations and Applicant Committed Measures - Will this operation be bonded either by SITLA, DOE or the City of Kanab? If so, the bond should be calculated at 100% of the reclamation costs as if conducted by a third-party contractor, and an additional 25% for administrative cost of contracting and monitoring the reclamation in the event that Viresco defaults on the reclamation. The bond should be reviewed annually or more often to assure that the bond amount is sufficient to reclaim the site in the event that Viresco defaults. Also, to assure the bond is sufficient to cover expanded operations, if permitted. There should be a memorandum of understanding/agreement between Kanab City, SITLA, DOE, UDEQ, and other entities that may be affected (possibly Arizona entities, because of the proximity to Arizona. The MOU/MOA should state that all entities agree that satisfactory reclamation has been completed before the bond is released. Also it is unclear of other entities will be involved in the permitting process. The table describes which agencies are responsible for various resources, however, who is responsible for the permit? It seems that as the landowner SITLA should be involved beyond just issuing the lease. Is DOE involved in the permitting process beyond preparing the EA? Additionally, there is a perception in Kanab that Viresco has offered to turn the buildings over to the City of Kanab once operations have ceased. If this is so, there should be provisions that the City of Kanab wants the buildings, and that they are free of any hazardous contaminants remaining from the operations. The City of Kanab should have the choice of accepting the buildings if it has a use for the buildings, or require complete reclamation of the site as described in the EA.
- 28-10** Page 21, Section 2.8 Consideration of Connected Actions, fifth paragraph - Will these ponds be lined to prevent wastewater from entering soils, or other surface or groundwater. How will the ponds be made inaccessible to humans and wildlife. Lined, fenced, netted.
- 28-11** How will the additional water affect Kanab City's sewer ponds? Will Viresco participate in maintenance in the ponds, or construction of additional ponds if needed?
- 28-12** Page 21, Section 2.8 Consideration of Connected Actions, sixth paragraph - As above, if a reclamation bond is required by Kanab City, SITLA, or DOE, these actions should trigger a review of the bond to assure it is sufficient to cover the costs of reclamation.
- 28-13** Page 2.9.2 Transportation and Traffic, second paragraph - Consider traffic to the new Public Safety Facility (County jail).

Thank you for the opportunity to comment.

Byard L Kershaw
1753 S. Kanab Creek Dr.
Kanab, UT 84741
Home Phone: 435.644.3094
Mobile Phone: 602.478.9621
Email: bkershaw@kanab.net

Responses

Comment 28-07

The subject of the comment regarding disposal of toxic or hazardous waste has been addressed in the response to comment number 15-09.

The subject of the comment regarding wastewater has been addressed in the response to comment number 56-15.

Comment 28-08

Viresco does not propose to include additional air pollution control equipment on the flare stack for the 30-day operational demonstration under the cooperative agreement with DOE, because the emission source would be comparable to a natural gas flare. As described in response to comment number 13-01, the maximum predicted downwind concentrations of all criteria pollutants would be well below the NAAQS, and the Pilot Plant would be a negligible to minor source for all air pollutants including HAPs. Air emissions during the potential 130-day additional period of operations would be subject to permitting by the UDEQ, which would dictate any need for additional air pollution control equipment.

Comment 28-09

The lease between Viresco and SITLA would require a bond to guarantee the performance of all covenants and obligations under the lease. As per the negotiated terms and conditions of this lease, Viresco would be responsible for properly removing structures, equipment and debris, restoring the land to the original contour, and revegetating the land as necessary upon termination of the lease. Additional text has been added to Section 2.7.5 in the Final EA describing the anticipated decommissioning process.

Necessary permits would be administered by the UDEQ or other regulating authority. Viresco is responsible for obtaining the permits and other authorizations needed for the project; DOE would have no regulatory authority over the project or its operation.

DOE's proposed action is to provide financial assistance to Viresco. The City of Kanab would have the discretion to negotiate with SITLA and Viresco with respect to transfer of the lease and acquisition of the buildings.

Comment 28-10

Should an evaporation pond be constructed, it would be lined with a High Density Polyethylene (HDPE) liner as discussed in Section 3.6.2. The Pilot Plant would be fenced to prevent human access and wildlife exclusion has been addressed in the response to comment number 56-15, which also discusses the potential use of an evaporation pond.

Commenter 28 – Byard Kershaw (continued)

Responses (continued)

Comment 28-11

The subject of this comment has been addressed in the response to comment numbers 9-01 and 56-15.

Comment 28-12

The subject of this comment has been addressed in the response to comment number 28-09.

Comment 28-13

Reference to traffic resulting from the new public safety facility has been added to Section 2.9.2.

Responses

Comment 29-01

Comment noted. See Section 3.5 of the EA for a discussion on air quality.

Commenter 29 – Bob LeCour

Joseph Zambelli - kanab Gasification Plant.

From: "Bob Lecour" <bjustbe@yahoo.com>
To: "joseph.zambelli@netl.doe.gov" <joseph.zambelli@netl.doe.gov>
Date: 9/15/2011 5:28 PM
Subject: kanab Gasification Plant.

Hello Mr Zambelli,
I wanted to comment on the inappropriate development of this Gasification plant in our little tourist town. I recognize this is a smaller operation and under the radar so to say but I believe it is just the first step in a process that will very much degrade our environment here. I live downwind from the project so I see it as another source of pollution to degrade the air we live in. This is especially true because this is a research plant so a wide variety of materials will be used. Please put this project on hold.
Thanks for your consideration.

Bob

Bob LeCour
bjustbe@yahoo.com

29-01

Responses

Comment 30-01

Comment noted.

Commenter 30 – Clint Malnar

Joseph Zambelli - Fw: Support of proposed goal plant. Address included

From: "Clint Malnar" <mvc@beyondbb.com>
To: <joseph.zambelli@netl.doe.gov>
Date: 9/15/2011 10:12 PM
Subject: Fw: Support of proposed goal plant. Address included

----- Original Message -----
From: [Clint Malnar](#)
To: joseph.zambelli@netl.doe.gov
Sent: 09/15/2011 8:09 PM
Subject: Support of proposed goal plant

To whom it may concern,

As opposed to my fellow neighbors, I support the plans for a local goal power plant. I own six mountain lots in Kane county and recognize that there is a cost to progression. Others are merely afraid of what they don't know. We are consumers of electricity and must be willing to accept that we have to create in order to use it. Most individuals do not want to accept that aspect of their consumption habits. Continue with your efforts, it will only build the economy in Kane County and EPA regulation are likely going to keep you in check. Carry on

Clint Malnar
Zion View Mountain Estates
2248 South Pintura Dr.
St. George, Utah 84790

30-01

Commenter 31 – Charlie Saba

Joseph Zambelli

From: "Charlie Saba" <charliesaba@hotmail.com>
To: "Joseph Zambelli" <joseph.zambelli@netl.doe.gov>
Date: 9/15/2011 9:49 PM

Mr. Zambelli,

I hope Mr. Guthrie's theories work and he is hailed as a great hero.
Having said that, I want to state that I hope his experiments happen someplace else.

Despite the fact that the majority of people living in and around Kanab do not want this plant here, the DOE has somehow, probably by political pressure disregarded our efforts. We do not want this shoved down our throats.

Kanab is a town that depends completely on tourism. With that in mind, it seems unrealistic that DOE would take even the slightest chance of damaging that tourism. There are other locations and lands that would suit this plant much better that are not very far away. In fact Mr. Guthrie OWNS more than enough property that is very close to an existing coal mine and had more than enough water for the operation of the plant.

DOE's EA seems to totally disregard these facts. WHY? Is there really that much political pressure being put on? Would you tell us WHO is doing the pushing?

As Mr. Guthrie has explained, this plant really offers Kanab NOTHING yet puts our very life at risk. Is it really worth it?

All of the accommodations made by the Kanab City Council are now being legally challenged. This should tell you how we feel.

Mr. Zambelli, for you and your crew it's just a job. For all of us, it is real life. DO NOT TAKE EVEN A SMALL CHANCE OF DESTROYING IT.

Charlie Saba

Responses

Comment 31-01

The subject of this comment has been addressed in the response to comment numbers 8-01 and 21-03.

31-01

Commenter 32 – Debra Csenge

Comments on Draft Environmental Assessment, Utah Coal and Biomass Fueled Pilot Plant, Kanab, UT

DOE/EA-1870D August 2011

Written 9/15/11

After reading the Draft Environmental Assessment for the Utah Coal and Biomass Fueled Pilot Plant, Kanab, Utah (DOE/EA-1870D) dated August 2011, I respectfully submit the following comments.

32-01

My husband and I purchased property in Kanab six years ago, after careful consideration of a number of communities in the region. We have been visiting the area for nearly 40 years, hiking and camping in the nearby National Parks and public lands. We came to the conclusion that Kanab offered the most in proximity to unparalleled scenic beauty and opportunities for healthy recreation, and for charm and quality of life, including unspoiled air and water, and potential for growing in a well-considered way beneficial to its inhabitants and the surrounding environment. At considerable sacrifice to ourselves, we moved here and have been active in the community life of this beautiful town. I personally cannot, in all good conscience, stand by and see this proposed facility built without expressing my concerns, for this is the place I have hoped to spend my remaining days. I have been involved in the scoping process for the proposed biomass fueled plant, have written previous comments and have attended the public meetings. My general impression of the preliminary EA was that it contained a bias towards minimizing the impacts to the community such a plant could impart, and was lacking in explicit supporting facts to back up this position. I ask for a more in-depth Environmental Assessment to be conducted before further approval is granted this project. I understand that the Department of Energy is entrusted with the daunting problem of supplying energy to a growing and increasingly demanding population and economy. However, I propose that we need to first increase our efficiencies and conservation efforts, as well as providing increasing support to clean energy sources, excluding fossil fuels. I also propose that the proximity of the proposed site to the city center of Kanab and residential as well as recreational areas, is simply not a good choice.

32-02

Comments on land use (3.1). The pilot plant would definitely not be compatible with the current plan for nearby recreational facilities, as well as being in the view of many residences in the Ranchos area. The change in zoning made to accommodate this plant would encourage similar activity to increase in the area, changing the character of the community. This is not in keeping with the town visioning models.

32-03

Comments on aesthetics (3.2). This is an area of concern that cannot be emphasized enough. The community relies economically on aesthetics, from the draw of tourism to the world-class attractions of the area, to the physical charm of the historic town itself, which keeps its visitors staying in the area long enough to contribute to its economy. The town needs to be selective about the aesthetics of its buildings, and this proposed facility does not fit in with these standards, with its industrial appearance, stack, and emissions.

Responses

Comment 32-01

The subject of this comment has been addressed in the response to comment number 21-03.

Comment 32-02

The subject of this comment has been addressed in the response to comment number 15-17.

Comment 32-03

The Draft EA considered the aesthetic qualities of Kanab, and the qualitative effects of the proposed Pilot Plant on the local viewshed. However, decisions about the zoning of areas for industrial use are appropriately within the jurisdiction of city government. The location of the Pilot Plant site was rezoned by the city to permit a facility of this type to be constructed on the site. The city has identified the area east of the Kanab Municipal Airport as an appropriate area for potential similar development because of the proximity to other uses, such as the Kane County Landfill, the Kane County Public Safety Facility, and the airport, and because the area is distant from and not visible from the downtown area where tourists find lodging.

Commenter 32 – Debra Csenge (continued)

- 32-04** Comments on seismic conditions (3.3.1.2) I would like to see more projections on what could happen to the holding ponds in the event of an earthquake. I understand that the ponds are lined, and would like to know how these liners would hold up under the stress of a quake, and how subsequent damage would be addressed and paid for. This seems an important issue: "The area is in an increased risk for seismic activity..." p. 39.
- 32-05** Comments on air quality and climate (3.5). For me this is of particular interest. I suffer from allergies and asthma and enjoy the fact that many days of the year, we have good air here. I experience some discomfort from the coal burning in town in the winter, and would not want to see any worsening of that situation. The argument that adding just a little more pollution will not substantially affect the existing conditions does not take into account the importance of at least maintaining, if not improving, the air quality for the citizens of the community. People with asthma, and that includes many children, are especially vulnerable to pollutants. A "minor adverse affect" can be the difference between whether a child with asthma can play outside, or must be kept indoors. Also, our tourists who come from all over this country as well as the world, are not expecting to see air pollution, however minor, being generated in a town show-casing its natural and cultural beauties.
- 32-06** Comments on greenhouse gases and global climate change (3.5.2.3). "The proposed project would produce a very minor increase in GHG emissions to the atmosphere." Why produce GHG at all, when there are alternatives? I would be much more receptive to a facility that did not produce pollution, such as wind or solar. Still, proximity to center of town would be a consideration. Why not put these projects farther afield?
- 32-07** Comments on groundwater (3.6). This particularly concerns me. Groundwater is one of our most precious resources, especially in the desert. The section 3.6.2 ends with the comment, "...a minor potential for groundwater contamination to occur would be expected." That is, with the continued operation of the plant. Does that mean, the longer the plant runs, the more contamination we can expect? Also, this is all dependent on the owner-operators complying with safety regulations. If they decide to cut corners and save money (and there are many examples in the energy business of these instances), how are we assured that our water is safe from toxic by-products?
- 32-08** Comments on economy and employment (3.10.2.3). As was frequently stated that minor impact was expected environmentally, also minor impact is expected economically, according to the EA. My question is, why should we subject ourselves to a number of "minor" negative impacts, when there is little to be gained economically? I think a lot of residents feel this way. It is argued in the text of the EA that visits to the National Parks would not decrease because of the proposed facility. Probably not. But I propose that the number of tourists staying in town, and the length of their visits, can be affected by what we build in our community. And this facility is not what people come here to experience. It is also argued in the EA that we already have some not-so-picturesque structures in town, so why not add another one? This is faulty logic. At some point, if we keep going in this kind of direction, we create a community that loses the character that Kanab currently has, which is appealing to both visitors and residents alike. I may have missed something, but I didn't see addressed the issue that some residents

Responses

Comment 32-04

A lined evaporation pond would only be constructed after the proposed action and if Viresco could procure funding to extend the operation time to 130 days. In that event, process water would be sent to the evaporation pond for retention and potential reuse. Alternatively, depending on the results of a water quality analysis, the wastewater may be treated through the Kanab municipal sewer system, or removed by commercial services for appropriate disposal. Evaporation ponds are dug into the ground, covered in a compacted clay layer, and then lined with a single layer HDPE liner. While shaking from seismic activity does occur around Kanab, building design codes for industrial structures include the potential for shaking, and it is highly unlikely that the basin or liner would be affected by an earthquake.

Comment 32-05

Potential environmental consequences of the proposed project to air quality are discussed in Section 3.5.2. As stated in the response to comment 13-01, increases in emissions would be de minimis (of minimal importance) and a project of this size would not interfere with the ability of the region to maintain the National Ambient Air Quality Standards, or have a significant effect on human health and welfare with respect to air quality.

Comment 32-06

DOE has a number of programs supporting renewable energy technologies. However, these technologies are not reasonable alternatives that meet DOE's purpose and need for the proposed action.

Comment 32-07

The statement "a minor potential for groundwater contamination to occur" means that when compared to an empty lot, the construction of an industrial project would increase the potential for petroleum contamination. The statement was not describing that groundwater contamination would occur in minor amounts, but that there is a small, incremental chance that a spill could reach local groundwater. However, there would be no large quantities of petroleum products stored at the Pilot Plant, so any incidental spills would be related to oils used for plant maintenance or from vehicles. If a spill occurred from these sources, the SPCC plan would require Viresco to quickly clean and remove any contaminated soils before the petroleum product could reach the groundwater table. The UDEQ, water quality division, monitors groundwater quality in Utah.

Commenter 32 – Debra Csenge (continued)

**32-08
(cont'd)**

are voicing the intention that they may consider moving from the area if this plant gets built. How would this affect our economy and our housing market?

In conclusion, I could continue, but as a person with many other responsibilities, I must bring this to a close. In general, I found the EA informative, especially in the first two chapters. However, I found the sections on potential impacts to be overgeneralized, minimizing of negative affects, and lacking in supportive reasons for coming to these conclusions. I would like to see a more detailed analysis of the impacts and how this plant specifically will minimize these potential negative impacts on our community, our economy and our environment. I would also like to see a more convincing argument as to why this is such a good location for this project, and not some other, more isolated or already industrial area.

32-09

I thank you for what you are doing. I want you to know that I understand and respect your mission. I have many concerns, and I thank you for the opportunity to air them.

Respectfully,

Debra Csenge
75 S. 100 W.
Kanab, UT 84741

Responses

Comment 32-08

The subjects of this comment have been addressed in the responses to comment numbers 21-03 (tourism) and 24-05 (land use).

Comment 32-09

The subject of this comment has been addressed in the responses to comment numbers 8-01 and 21-03.

Commenter 33 –Diane Decker

Joseph Zambelli - Environmental Assessment on the Utah Coal and Biomass Fueled Pilot Plant

From: "Diane Decker" <ddecker@div.duke.edu>
 To: "Joseph Zambelli" <Joseph.Zambelli@NETL.DOE.GOV>
 Date: 9/15/2011 2:22 PM
 Subject: Environmental Assessment on the Utah Coal and Biomass Fueled Pilot Plant

From Diane Decker, 218 Cheryl Ave. Durham, NC 27712

33-01 The purpose and need to pursue this type of research, nationally, may be valid. However, the need to site this plant, specifically, in Kanab is not demonstrated.

33-02

- The report states "Construction and operation of the proposed project in combination with the Kane County Public Safety Facility **could** adversely impact uses of recreational areas associated with the Jackson Flat Water Supply Storage Project."

If it could, then it will. How could it not? Why is this not quantified? What sort of valid recreational area has a coal burning plant next to it? This plant will ruin that attempt to develop this area to contribute to the City of Kanab.

33-03 "Water resources used by the Pilot Plant would be treated and recycled in the process for reuse under the DOE cooperative agreement for 30 days of operation or possibly returned to the environment through an evaporation pond under future operations."

What does this mean? What does this mean when the plant burns for 130 days? This (again) is not answering concerns. Hello..... whose water is this, anyway? The water is the water of the citizens of Kanab.

33-04 The following is a quote from citizen Roger Hoverman ,with whom I am in total agreement.
 "DOE's intention is to only be involved with this project out to the 30 operation-day per year mark, as per a cooperative agreement with the proponent. However, DOE is fully aware the proponent intends to achieve a 130 operation-day mark and DOE acknowledges this in EA section 2.8: Consideration of Connected Actions.

Nowhere in the EA have I discovered a projection (time frame) of how many years the plant would likely be operated to achieve the 130 operation-day mark or even the 30 operation-day mark. Therefore this environmental assessment is deficient in making full disclosure of what actions are intended as required by NEPA and its implementing CEQ regulations. Please correct this deficiency"

Responses**Comment 33-01**

The subject of this comment has been addressed in the response to comment number 8-01.

Comment 33-02

The subject of this comment has been addressed in the responses to comment numbers 13-02 and 24-06. It is not unusual for surface water resources to be used both for recreation and as sources for cooling waters required by industrial facilities, including coal-fueled plants.

Comment 33-03

Under the connected action, Viresco intends to collect part or all of the process wastewater in the evaporation pond for recycling as one of its options to handle the wastewater. See also response to comment number 56-15, which addresses water demand and supply.

Comment 33-04

The subject of this comment has been addressed in the response to comment number 6-01.

Commenter 33 – Diane Decker (continued)

33-05

I respectfully insist that, due to the amount of controversy this project has generated, and the disastrous effect that this will have on the citizens of Kanab economically, socially, and environmentally, that DOE complete an EIS for this project which would provide the opportunity to find more suitable alternative location to site the plant. How about five miles northwest of Beulah, ND, the site of the Dakota Gasification plant?

Thank you,
Diane Decker

Responses

Comment 33-05

The subject of this comment has been addressed in the responses to comment numbers 12-01 and 8-01. The level of NEPA review would not change the range of reasonable alternatives available to DOE to meet its purpose and need.

Commenter 34 – Daniel Bullets

Viresco Energy Pilot plant Comments by Daniel Bullets

- 34-01** | 1. Why would someone want to build a facility that will be destroyed after a few months of use? I don't see the logic and to me it looks like Kanab and Viresco have a hidden agenda. Why destroy an area that already has trees, plants and animals living on it?
- 34-02** | 2. This is a very small project in the eyes of the builders but all it takes for something to get out of control is something very small. I look at this project like a germ that can quickly spread to a virus and then affect everyone around it.
- 34-03** | 3. Why would Viresco go into a 30 year lease of the land with Kanab when the project will not last a few years at most? By agreeing to a 30 year lease to me it seem like Viresco wants to do something more with the land. I know that Viresco works with sewage sludge and would that be the next thing they will be burning and bringing to the area.
- 34-04** | 4. If Viresco is looking to continue the plant after the DOE funding runs out would that automatically turn this EA into an EIS because its planning to do more testing and that mean emitting more air pollution and accumulating more ash? And that is something that needs to be looked at in a EIS.
- 34-05** | 5. In section called vegetation and wildlife (2.9.4) the writer states that no vegetation or animals will be affected when in fact all the vegetation that he or she mentions is what the Paiute people use today. The writer stated that no wildlife was seen on a specific date they were there - when I visited the area I saw birds, rabbit, deer, coyote, mouse-tracks all over the project area.
- 34-06** | 6. In the environmental consequence section they mentioned odors from the facility will be minimal or dissipates before reaching residential areas. What they don't know is during the spring and summer months our winds come from the southwest or west which will blow odors to the Jackson flat recreation area and then onto Kanab. During the fall and winter months our winds come from the east & north which will blow odors to the Arizona residents that live a quarter mile from the project area and would blow odors into the town of Fredonia.
- 34-07** | 7. In Cultural Resource 3.4 DOE stated that since Utah SHPO did not find anything in the area that could be eligible for the historic preservation that a monitor would not be needed and the construction foreman would suffice as monitor. DOE also stated that at the Kane County public safety facility the construction company found no cultural resources as it was being constructed and that the pilot plant is in the same kind of area and they expect not to find anything. I think a Tribal monitor is needed especially if there are cultural arch site in that area as stated in the Bighorn Archaeological consultation report they refer too.

Responses

Comment 34-01

The subject of this comment has been addressed in the response to comment number 6-01.

Comment 34-02

Comment noted.

Comment 34-03

The subject of this comment has been addressed in the response to comment number 6-06.

Comment 34-04

Impacts due to continued operations by Viresco of up to 130 days of additional testing are addressed in each resource area in Chapter 3 of the EA as a connected action, and the impact analysis for this EA has been bounded by these assumptions. As stated in the EA, in the future, Viresco may consider other options for the management of process wastewater and may consider adding some form of gas cleanup processing and hydrogen separation. The details of these potential actions are not known at this time and Viresco does not intend to pursue any of these options during DOE's involvement. Such changes would likely require the acquisition of approvals or permits from state agencies having jurisdiction over environmental compliance. Future NEPA review by a respective federal agency would be triggered in the event that Viresco were to seek federal funding for additional upgrades or expansions to the Pilot Plant.

Comment 34-05

The EA has been revised to include a more in-depth analysis of Biological Resources, including the Kaibab Band of the Paiute's list of plants and animals of cultural concern (see Section 3.11).

Comment 34-06

As stated in the Draft EA, no odors from the facility would be expected. Additional information has been added to the Final EA in Section 3.5.2.4 for clarification.

Comment 34-07

Section 3.4.2 of the Final EA has been revised to state that DOE will require Viresco Energy, LLC to allow a single tribal representative from the Kaibab Band of the Paiute Indians, and any other Indian Nation that requests involvement in the project, to be on-site to monitor land clearing and excavation. Each monitor must report to the site superintendent prior to entering the construction work area. Monitors must comply with all local, state and federal health and safety rules and regulations and obtain any required safety training before monitoring can commence.

Commenter 35 – Ed Gosnell

Joseph Zambelli - Coal Gas Plant for Kanab Utah

From: "Ed Gosnell" <EEGosnell@spart7.org>
To: "joseph.zambelli@netl.doe.gov" <joseph.zambelli@netl.doe.gov>
Date: 9/16/2011 8:22 AM
Subject: Coal Gas Plant for Kanab Utah

35-01

Mr. Zambelli, I currently live out of state but hope to retire to the Kanab area. I own 20 acres in Kane County and will consider Kanab my home one day. I am in agreement with the non-support for the proposed plant. Please consider the questions and concerns that follow. Thank you...

ed gosnell 320 Jonesville South Carolina 29353.

TPA Update – Please Send Your Comments to the DOE by Friday

Dear TPA Member:

If you care about the coal gas plant proposed for Kanab, here is an opportunity to make a difference.

Last month the Department of Energy (DOE) issued their draft Environmental Assessment (EA) for the proposed Viresco Energy LLC Coal Gasification Plant. In May and June many of our members submitted scoping comments to guide the extent of this environmental assessment.

You can read the Draft EA here:

We believe that this EA did not adequately assess the risks associated with this proposed coal gas plant in our community.

Here is your opportunity to comment on the EA.

Please write a comment letter and email it to: joseph.zambelli@netl.doe.gov

Title your letter: Comments on the Utah Coal and Biomass Fueled Pilot Project

The last day to officially submit comments is tomorrow, Friday. If you need more time, then write them over the weekend, as the DOE has stated that they will make an effort to accept comments after the deadline. It is preferable to get our letter emailed by Friday.

*Below are suggestions on what to include in your comment letter.

Responses

Comment 35-01
Comment noted.

Commenter 35 – Ed Gosnell (continued)

I want to thank everyone who is submitting comments as this DOE approval process is a crucial step in protecting us from the adverse harm that can take place from the proposed coal gas plant.

Respectfully,

Dr. Sky Chaney ~ President, Taxpayer Association of Kane County

Suggestions On Comments to Submit on the EA of the Viresco Coal Gas Plant

- 35-02** 1. Ask the DOE to grant a **time extension for the Comment period** and give reason(s) why this is needed (eg. research into info used to make effects evaluation is complex and need more time to provide intelligent comment).
- 35-03** 2. Insist that due to the amount of controversy generated, DOE **complete an EIS for this project**. This Environmental Impact Study will result in a much more comprehensive review of the risks associated with this coal gas plant to our community. It will also provide the opportunity to mitigate adverse effects by developing an alternative location to site the plant.
3. If you commented during the earlier scoping period (May and June), drag those comments out and determine if the DOE addressed them fully in their analysis. If not state that you believe **they did not address your comments at all or address them adequately**. Insist that they **address the issues in an EIS**.
4. Below is a **list of possible comments** to include in your letter to the DOE. Be sure to use your own words in presenting these sample issues... and add your own additional comments in your letter. Make suggestions on how they could improve the analysis if you have one.

Email your Letter to: joseph.zambelli@netl.doe.gov

Title your letter: Comments on the Utah Coal and Biomass Fueled Pilot Project

Be sure you provide your **name and address**.

If you are concerned about anonymity, ask that your name and address not be disclosed in the publication of Comments which will be included in the Final EA.

Be respectful, but insistent. Write clearly. Be sure to state what you want or expect DOE to do with respect to your point.

Possible Comments: Draft EA for Utah Coal and Biomass Fueled Pilot Plant (DOE/EA-1870)**Responses****Comment 35-02**

The subject of this comment has been addressed in the response to comment number 20-01.

Comment 35-03

The subject of this comment has been addressed in the responses to comment numbers 12-01 and 8-01.

Commenter 35 – Ed Gosnell (continued)

35-04	<p>1.0 PURPOSE AND NEED: The Purpose and Need to pursue this type of research, nationally, is agreed. However, the need to site this plant, specifically, in Kanab is not demonstrated. Say why you think so and what DOE should do to fix this.</p>
35-05	<p>2.0 ALTERNATIVES: Why wasn't an alternative location analyzed? The Congressional earmark language only specifies the State of Utah. I do not accept DOE's rationale the Proposed Action and the No Action constitute a "reasonable range of alternatives". Explain why?</p>
35-06	<p>2.7.5 DECOMMISSIONING "The Pilot Plant would be decommissioned and the site restored no later than the end of the site lease period." What does decommissioned mean exactly? Would all the structural components of the plant be dismantled and removed from the site?</p>
35-07	<p>3.0 EXISTING CONDITIONS AND ENVIRONMENTAL CONSEQUENCES Ask that DOE demonstrate an analysis occurred. Evaluative statements are made without making a direct (or disclosure, if indirect) connection with the analysis performed and at what scale.</p> <p>3.10 SOCIO-ECONOMICS: DOE demonstrated a preconceived notion leading to a Finding of No Significant Impact instead of being unbiased, fair and balanced in evaluation of effects. This is illustrated in the verbage used on page 54, 4th paragraph. "Process water from the Pilot Plant will be recycled.....process wastewater will have no impact to the City of Kanab's wastewater system." [Emphasis is mine.]</p>
35-08	<p>4.0 CUMULATIVE IMPACTS:</p> <ul style="list-style-type: none"> • 4.2.1 Land Use: "Construction and operation of the proposed project in combination with the Kane County Public Safety Facility could adversely impact uses of recreational areas associated with the Jackson Flat Water Supply Storage Project." • This is not an analytical statement and not sufficient to adequately disclose potential impact(s).
35-9	<ul style="list-style-type: none"> • 4.2.2 Aesthetics: "Construction and operation of the proposed project in combination with the Kane County Public Safety Facility could adversely impact views from the recreational areas associated with the Jackson Flat Water Supply Storage Project and, to a lesser extent, residences to the northwest of the Pilot Plant site." This is not an analytical statement and not sufficient to adequately disclose potential impact(s).
35-10	<ul style="list-style-type: none"> • 4.2.4 Cultural Resources: "If any human remains are discovered, then such a discovery could be viewed as a cumulative impact of the projects." I ask you when would disturbance of a burial not be considered an impact, cumulative or otherwise? This is not an analytical statement and not sufficient to adequately disclose potential impact(s).
35-11	<ul style="list-style-type: none"> • 4.2.4 Cultural Resources: "The discovery of prehistoric human remains at an archaeological site investigated during the course of the Jackson Flat Water Supply Storage project, however, has heightened concerns among the Kaibab Band of Paiute

Responses

Comment 35-04	The subject of this comment has been addressed in the response to comment number 8-01.
Comment 35-05	The subject of this comment has been addressed in the response to comment number 8-01.
Comment 35-06	As stated in response to comment number 24-03, Section 2.7.5 was revised to include a discussion of specific decommissioning activities that would occur. Viresco would be responsible for properly removing structures, equipment and debris, restoring the land to the original contour, and revegetating the land as necessary upon termination of the lease.
Comment 35-07	The subject of this comment has been addressed in the response to comment number 24-04.
Comment 35-08	The subject of this comment has been addressed in the response to comment number 24-05.
Comment 35-09	The subject of this comment has been addressed in the response to comment number 24-06.
Comment 35-10	The subject of this comment has been addressed in the response to comment number 24-07.
Comment 35-11	As stated in Section 4.2.4 of the EA, two cultural resources, both of which have been determined by the SHPO not to be eligible for inclusion on the NRHP, are located entirely within the proposed project area. The response to comment number 24-07 addresses the potential discovery of Native American remains.

Commenter 35 – Ed Gosnell (continued)

**35-11
(cont'd)**

Indians that human remains may be encountered during construction for the present project." What does the consulting archeologist and SHPO have to say on the likelihood of discovering human remains if excavation for this project were to occur?

5.2 Irreversible or Irretrievable Commitment of Resources

"Water resources used by the Pilot Plant would be treated and recycled in the process for reuse under the DOE cooperative agreement for 30 days of operation or possibly returned to the environment through an evaporation pond under future operations."

35-12

Facility Processes and Equipment (Section 2.7.2.) makes no mention of an evaporation pond; no evaporation pond is discernable in Figure 2-3. Please explain what is meant by "returned to the environment". Would this effluent truly be left to evaporate in a pond?

Temporal Analysis of effects is inadequate:

DOE's intention is to only be involved with this project out to the 30 operation-day per year mark, as per a cooperative agreement with the proponent. However, DOE is fully aware the proponent intends to achieve a 130 operation-day mark and DOE acknowledges this in EA section 2.8: Consideration of Connected Actions.

35-13

Nowhere in the EA have I discovered a projection (time frame) of how many years the plant would likely be operated to achieve the 130 operation-day mark or even the 30 operation-day mark. Therefore this environmental assessment is deficient in making full disclosure of what actions are intended as required by NEPA and its implementing CEQ regulations. Please correct this deficiency.

Responses

Comment 35-12

The subject of this comment has been addressed in the response to comment number 24-08.

Comment 35-13

The subject of this comment has been addressed in the response to comment number 6-01.

Commenter 36 – John W. Hiscock

John W. Hiscock
1502 So. McAllister Dr.
Kanab, UT 84741
johnwhiscock@gmail.com

September 15, 2011

Mr. Joseph Zambelli
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Rd.
M/S: BO7
P.O. Box 880
Morgantown, WV 26507-0880

[These comments delivered as an e-mail attachment to joseph.zambelli@netl.doe.gov.]

Dear Mr. Zambelli:

This letter is submitted in response to the Draft Environmental Impact Assessment (EA) for the Utah Coal and Biomass Fueled Pilot Plant project, Kanab, Utah (Draft EA-1870D) prepared by the U.S. Department of Energy (DOE).

36-01 I have thoroughly reviewed the EA and have concluded that it fails to properly analyze the potential impacts of the proposed action, and fails to properly inform the public in many ways. Due to the controversial nature of the proposed action and the complexity of many potential impacts, DOE should prepare a full scale Environmental Impact Statement (EIS) regarding this action. At a minimum, due to the deficiencies in the EA, DOE should prepare a new draft EA, in sufficient form and addressing all relevant public concerns regarding the action, and re-release said draft EA for further public review.

My observations concerning deficiencies in the EA follow:

36-02 DOE States That the Potential 130 Day Per Year Operation of the Viresco Project/Plant is Analyzed as a "Connected Action," However the Number of Potential Years of the 130 Day Per Year Operation of the Project/Plant is Undefined. Therefore, DOE's Analysis of This "Connected Action" is Insufficient, and Consequently the EA Must be Considered Deficient.

Mr. Zambelli's (National Energy Technology Laboratory (NETL)/DOE) introductory letter to the EA states:

Responses

Comment 36-01

The subject of this comment to prepare an EIS has been addressed in the responses to comment numbers 12-01. With respect to the request for a new EA, DOE considers that the Draft EA has been revised as appropriate in response to comments received and that the revisions do not affect the essential findings of the EA with respect to environmental impacts.

Comment 36-02

The subject of this comment has been addressed in the response to comment number 6-01.

Commenter 36 – John W. Hiscock (continued)

The Draft EA evaluates the potential environmental impacts of Viresco's proposed project. Viresco would operate the facility and collect data for 30 days of operation over a period of months under the agreement; after the DOE's financial assistance ends, Viresco plans to seek additional funding for continued operations. These operations would be limited by the funding available and would not be expected to exceed 130 days of operation in any year, including a possible 90-day continuous test run. DOE considers the possible continued operation of the pilot plant as a connected action under NEPA. (p.1)

The EA, Section 2.8 – "Consideration of Connected Actions" states: "This EA analyzes the possibility that Viresco may operate its facility for as many as 130 days annually after DOE's involvement ends as a connected action. The potential impacts of this connected action are described below." (p.21). The EA also states: "Impacts due to continued operations of up to 130 days per year are addressed in each resource area in Chapter 3 as impacts attributable to this connected action." (p.21).

**36-02
(cont'd)**

The number of years of Viresco's project/plant operation at the continued annual duration of 130 days per year is unquantified in the EA. The 130 day per year operation could go on for one year, or could continue for many years. The Viresco lease from the State of Utah School & Institutional Trust Lands Administration (SITLA) is reported to have a term of thirty years. (EA, Sec. 2.7.5, p.19)(Southern Utah News, January 26, 2011). The EA states: "Viresco has informed DOE that it intends to operate its Pilot Plant for a maximum of 130 days during a calendar year if it is able to obtain financing." The EA does not state that Viresco only intends to conduct one year of 130 day per year operation. Consequently, the DOE analysis should evaluate all potential impacts of Viresco operations, including the "connected action" of an expanded 130 day per year operations for the potential period of thirty years. The EA does not do so. At best the EA partially analyzes the potential impacts of one year of an expanded 130 day per year operation.

At the August 30, 2011 DOE EA hearing in Kanab, Utah, I personally asked DOE representative Joseph Zambelli what scope of expanded 130 day per year operations were analyzed in the EA, and he responded that only one year of such operations was assessed. I then pointed out the deficiency of this "connected action" analysis and asked Mr. Zambelli that the EA be redone to analyze the true potential of 130 day operations over thirty years.

Full analysis of the 130 day per year "connected action" is critical, and in fact should be another reason for requiring a full EIS. The scenario of 130 days of project/plant operation each year, with an allowance for 90 day continuous test runs each year, and the potential for such operations for up to thirty years is significantly greater than the initial plant operational period of 30 days.

Responses

Commenter 36 – John W. Hiscock (continued)

Comparison of Proposed Plant Operations
Over a Potential Thirty Year Period v. Initial 30 Day Operational Period

	Initial Operational Period	One Year/130 Days Per Calendar Year	30 Years/130 Days Calendar Year
Total potential days of operation	30 days	130 days	3900 days
Potential and allowable consecutive days of continuous operation	30 days	90 days/yr. + 40 days/yr.	90 days/yr. + 40 days/yr in each of up to 30 yrs.
Maximum potential for consecutive days of operation	30 days	1 run of 90 consecutive days & 1 run of 40 consecutive days	1 run of 90 consecutive days & 1 run of 40 consecutive days each year; if repeated each year, a total of 2700 days from 90 day runs, and 1200 days of 40 day runs over 30 years.

It also must be recognized that a continuous run of 180 days is possible if overlapping calendar years (beginning on October 1st of year one and ending approx. March 31st of year two).

The existing EA clearly fails to evaluate the increasing magnitude of the potential 130 day per year operation and "connected action." These ramifications are significant and should result in preparation of an EIS, or at a minimum complete revision of the EA and issuance of a new draft.

DOE's Assessment of "Environmental Consequences" in Chapter 3 of the EA Fails to Analyze the Potential Impacts of the 130 Day Per Year/90 Day Continuous Operation "Connected Action." The EA is, Therefore, Deficient and Must be Discarded and Revised.

Again, the EA states: "This EA analyzes the possibility that Viresco may operate its facility for as many as 130 days annually after DOE's involvement ends as a connected action. The potential impacts of this connected action are described below." (p.21). The EA also states: "Impacts due to continued operations of up to 130 days per year are addressed in each resource area in Chapter 3 as impacts attributable to this connected action." (p.21).

Although the EA attests to analyze the impacts of 130 day per year operations in each topical section of Chapter 3 on "environmental consequences", the EA and its Chapter 3 consistently fail to adequately address such impacts. Typically, each topical section of Chapter 3 makes a statement concerning the

Responses

36-02
(cont'd)

Commenter 36 – John W. Hiscock (continued)

**36-02
(cont'd)**

initial speculative 30 day operation of the plant. The EA then goes on to summarily, hastily, and inadequately address the significantly greater potential impacts of 130 day per year/90 continuous day operation and multiple year scenarios. An example is EA Sec. 3.5.2 on air quality wherein the "analysis" of the 130 day per year "connected action" is summarily discarded by simply stating: "Under the connected action of possible future operation, the Pilot Plant may operate up to 130 days per year. If the Pilot Plant's total emissions under this scenario were to exceed the levels outlined in the small source exemption, the facility would need to obtain a minor source operating permit from UDEQ." (EA, p.45). This statement, merely explains what permitting requirements must potentially be met, but does not analyze the environmental consequences of the "connected action." DOE's analysis of the "connected action" is similarly insufficient in each topical area of Chapter 3. The EA must be revised from scratch or more appropriately, be replaced by an EIS due to this deficiency and the larger potential impacts of the 130 day per year/90 day continuous operation.

The Potential Environmental Impacts of the Proposed Project and Connected Actions Cannot be Adequately Addressed Without Knowledge of the Final Terms and Conditions of the Potential SITLA Lease. Therefore, the EA is not Timely, Should be Retracted, and Environmental Analysis not Conducted Until the Terms and Conditions of the Lease Are Set.

36-03

The EA state that the terms and condition of the SITLA lease have been negotiated, but a lease has not been signed. The lack of a signed lease indicates that the terms and conditions of said lease may change. If terms and conditions of the lease are not finalized, the potential environmental impacts of the project cannot be adequately analyzed as final terms and conditions of the lease may modify the factual scenarios under which different environmental impacts should be analyzed. NEPA analysis should only proceed after the terms and conditions of the SDITLA lease are finalized.

DOE's Compliance With the Provisions of the National Historic Preservation Act (NHPA) and Related Consultation With the Utah State Historic Preservation Officer (SHPO) are Faulted, Inadequate and Deficient. Consequently, the EA is Deficient, and Must be Retracted.

36-04

NHPA requires consideration of impacts of federally funded projects such as the subject, proposed project, on historic properties. The EA asserts that an assessment of the presence of, and impact upon historic properties by the project was accomplished via the Bighorn Archeology surface survey titled "A cultural Resource Inventory of the Proposed Kanab Steam Hydrogasification Pilot Plant, Kane County, Utah" (Report Number 10-53). This survey and report supposedly investigated the "proposed area of potential effect." (Ltr. – Joseph Zambelli, DOE to Lori Hunsaker, Deputy State Historic Preservation Officer, Utah, May 13, 2011.)

The EA states that NEPA analysis and related NHPA analysis must cover the proposed action and all "connected actions." The EA defines "connected actions" as follows:

A connected action is one that is closely related to DOE's proposed action or Viresco's proposed project, including an action that automatically triggers another action which may require an EA or EIS; an action that cannot or would not proceed unless another action is taken previously or simultaneously; or an action that is an interdependent part of a larger action and depends on the larger action for its justification. (EA, Sec. 2.8. p.21).

Responses

Comment 36-03

The subject of this comment has been addressed in the response to comment number 15-06.

Comment 36-04

The text in Section 3.8.2 of the Final EA has been revised based on further clarification by Garkane Energy of the "improvements" indicated in its will-serve letter of August 8, 2011 (EA Appendix C). The necessary improvements would consist of the installation of connection wiring between an existing power transmission line on Old Landfill Road adjacent to the proposed Pilot Plant site (see Figure 3-13 in the Final EA) and the site proper. This connection wiring would cross Old Landfill Road and not require any new easements or rights-of-way to be acquired or disturbed.

Furthermore, as discussed in Section 3.8.1 of the Draft EA, the City of Kanab recently installed potable water and sewer lines along Kaneplex Road (see Figure 3-12 in the Final EA) at the northern boundary of the proposed Pilot Plant site to serve the Kane County Public Safety Facility. Excavation for connection to these utilities would occur on the proposed site and would be included within the general construction of the Pilot Plant.

Commenter 36 – John W. Hiscock (continued)

Responses

36-04
(cont'd)

In the EA, DOE explicitly states that Garkane Energy actions to provide electricity to the project site are in the nature of “connected actions.” (EA, Sec. 2.8, p.21). Therefore, by DOE’s own explanation, the potential impacts of these “connected actions” to provide electrical service are subject to NEPA analysis, including NHPA analysis. Likewise, and following the same logic, actions of the City of Kanab to provide water and sewer service should also be considered “connected actions” subject to NEPA and NHPA analysis.

Garkane Energy has stated that in order to provide electrical service to the project, “easements must be acquired, . . . and a 3-phase 12.5 kV power line constructed to the site” (Ltr. – Jeff Vaughn, Kanab Area Manager, Garkane Energy to Arun SK Raju, PhD., Viresco Energy, L.L.C., August 8, 2011). It must be presumed that some of the prospective Garkane work will require some degree of ground disturbance – even if just the placement of power poles, or certainly the placement of underground power lines. Likewise, Kanab City has stated that it can provide water and sewer service to the project “contingent upon the placement of necessary infrastructure.” (Ltr. – Duane Huffman, City Manager to Viresco – “Can & will Serve Letter – 400 East Kaneplex Road (Viresco Energy Project)”, October 13, 2010.) Necessary infrastructure for water and sewer undoubtedly entails ground disturbance.

Although the locational extent of the electrical, water, and sewer infrastructure necessitated by the project is unclear, the impacts of placement of such infrastructure must be evaluated as “connected actions.” The aforementioned Bighorn Archaeological Consultants survey and subsequent consultation with the Utah SHPO appear insufficient to meet the requirements of the DOE EA and NHPA as those actions appear to be specific to the “proposed area of potential effect” known or focused upon at the time of the archeological survey in September, 2010. At the August 30, 2011 DOE EA hearing in Kanab, Utah, I personally asked DOE representative Joseph Zambelli what the locational extent of the Bighorn archeological survey included. He responded that the survey only covered the actual proposed plant site. I mentioned that the areas to be potentially disturbed in Garkane and City of Kanab actions to establish electrical service, and water and sewer service should have also been considered as “connected actions.” Mr. Zambelli stated that electrical service, and water and sewer service were already in place. His statement must be erroneous, given that the EA dated August, 2011 states that electrical improvements must still prospectively occur (see EA, Sec. 2.8, p. 21).

In regard to electrical improvements for the project, although the EA makes the presumptive and speculative statement that “DOE anticipates that the improvements and easements would occur in existing disturbed areas or adjacent to existing rights-of-way, which would result in minimal impacts” this statement is insufficient to meet the requirements of the NHPA and related consultation with the Utah SHPO. Again, NHPA requires that areas of potential impact – in this case areas to be potentially impacted by electrical, water and sewer improvements for the Viresco project must be assessed for historic properties (as Bighorn did for the plant site), and an analysis of impacts completed. The NHPA assessment or survey must be conducted by professionals meeting the Secretary of the Department of the Interior’s standards applicable to, and governing the NHPA process and responsibilities of all federal agencies.

Consequently, the EA is insufficient in regard to NHPA compliance and related Utah SHPO consultation. The EA should be retracted, full NHPA process followed in regard to areas to be affected by electrical,

Commenter 36 – John W. Hiscock (continued)

36-04 (cont'd)	water and sewer improvements related to the project, as "connected actions," and additional consultation conducted with the Utah SHPO. Additional consultation with affiliated Indian tribes may also be necessary based upon what the NHPA survey may reveal.
	<u>The DOE EA Analysis of Impacts on Aesthetics is Deficient</u>
36-05	The DOE analysis speaks to construction related impacts on aesthetics, and views from residential areas. It simplistically concludes that if existing buildings at the Kanab Airport, the Kane County Public Safety Facility and the Kane County Landfill can be seen from residential areas, that the addition of the Viresco plant causes little or no additional impact on aesthetics.
36-05	The point that the EA does not take into consideration is that the impact of a new, otherwise non-existent, industrial type facility will be imposed on the viewshed aesthetics from residential areas – primarily, much of the Kanab Creek Ranchos area. An industrial facility has different impacts aesthetically, than other buildings and facilities, and those aesthetic impacts are predominantly, if not wholly negative. Viewshed aesthetic impacts are major and significant, not "minor" as stated in the EA.
	<u>The DOE EA Analysis of Impacts on the Socio-Economy of Kanab is Deficient</u>
36-05	The DOE analysis essentially concludes that the addition of a potential nine jobs related to the Viresco project would benefit Kanab and Kane County. The EA has totally missed the most important socio-economic impacts of the proposed project. (Please see my e-mail and letter of June 16, 2011).
36-05	The socio-economic impacts that must be assessed as related to this project are: (1) the impact of the project on the mainstay tourism economy of Kanab; and (2) the impact of the project on residential property values in Kanab.
36-06	As previously pointed out, the mainstay of the Kanab economy, both historically and presently, is tourism, and tourism related to visitation to parks, monuments, public lands, wilderness and nature. Visitors travel from locations worldwide to surrounding public lands, parks and monument to enjoy largely unspoiled nature and some of the finest opportunities for solitude anywhere in the world. They shop, eat and stay in Kanab as it is central to these outdoor opportunities. It is obvious that the placement of an industrial facility in Kanab, with potential further expansion, or duplication, contradicts the experience that these individuals are seeking. Businesses that rely upon the outdoor tourism that Kanab services will suffer. This must be addressed in the EA and identified as a significant socio-economic impact. The negative economic impact of the Viresco project on the desirability of Kanab to tourists traveling through the area cannot be overcome by the addition of nine potential Viresco employees. Closely related, is the socio-economic driver of Kanab related to the influx of retirees and others buying property and residences here for proximity to outdoor recreational pursuits, scenic beauty, nature study, and solitude of public lands. The desirability of the community in these regards has supported and escalated real estate value as demonstrated during the real estate and development boom from roughly 2001 – 2007, only stalled or somewhat reversed by the nationwide recession of 2008 through the present.

Responses

Comment 36-05

The subject of this comment has been addressed in the responses to comment numbers 24-06 and 32-03. Additionally, as discussed in response to comment number 15-18, Figure 3-6 has been revised in the Final EA (now Figure 3-7) to show approximately how large the Pilot Plant would appear from the same vantage point in comparison to the visibility of nearby manmade features, including the Kanab Municipal Airport, the Kane County Public Safety Facility, and the Kane County Landfill.

Comment 36-06

The potential effect on tourism has been addressed in the response to comment number 21-03. With respect to the potential effects on property values, DOE is not aware of any firm basis on which to analyze the potential impact of construction and operation of a pilot-scale research facility on housing prices. There is evidence that construction of a full-scale power plant (greater than 100 megawatts capacity) could affect local real estate values (Davis, 2010). However, the study results are not relevant due to the difference in scale compared to the proposed Pilot Plant, which would occupy approximately 1.5 acres of land, consume 5 tons of coal per day of operation, and be exempt from a state air permit. Furthermore, real estate values have declined nationwide since the subprime mortgage crisis occurred in 2008-09, which would distort any potential analysis of the basis for declines in local real estate values.

Commenter 36 – John W. Hiscock (continued)

**36-06
(cont'd)**

Virtually all of the residential newcomers to Kanab seek the described benefits of the community and oppose the addition of industrial facilities to the community. Not only that, but real estate prices/trends indicate an arguable decline in values and real estate marketability since the proposal of the Viresco project – 2010 to present. I believe that this can be confirmed by real estate professionals in Kanab. The decline in desirability of the community to new residents, as described, cannot be offset by the potential addition of nine Viresco employees.

These socio-economic impacts are significant. They have been ignored in the EA. The EA is deficient in this regard and must be retracted, replaced with an EIS, or at the least, drastically revised.

36-07

I could offer many other observations and comments on deficiencies of the EA, however, the lack of available time to do so, unfortunately prevents me from doing so.

I believe that you should refer again to my previous comments regarding cumulative effects of the project (see my e-mail and letter of June 16, 2011).

Overall, again, the EA is deficient for a variety of reasons and should be retracted. It should be replaced with a well analyzed EIS. Or, at a minimum a completely revised EA to once again be released in draft form for further meaningful public comment.

Thank you for the opportunity to comment. I hope reconsidered NEPA analysis will result.



John W. Hiscock

Responses

Comment 36-07

Comment noted. The response to comment number 12-01 addresses the comment pertaining to an EIS. Chapter 4 of the EA addresses cumulative impacts.

Commenter 37 – Lynda Marpole

Joseph Zambelli - RE: Draft EA for the Utah Coal and Biomass Fueled Pilot Plant

From: "Lynda Diane Marpole" <lmarpole@kanab.net>
 To: "Joseph Zambelli" <Joseph.Zambelli@NETL.DOE.GOV>
 Date: 9/15/2011 4:49 PM
 Subject: RE: Draft EA for the Utah Coal and Biomass Fueled Pilot Plant
 CC: <lmarpole@kanab.net>

Dear Joseph Zambelli

Re: The Proposed Viresco "Pollution Generating" Pilot Plant

- 37-01** 1. The very first thing I noticed in your document is that the EA considers there will be "no "significant" impact to the environment". To me that means there will be some impact to the environment. I would like to know what the EA considers to be "not significant" and what the EA considers to be "significant". ALSO; how can the EA say there will be "no significant" impact to the environment when the Viresco project is a "pilot" to determine "if" the plant can produce methane. The EA does not have any documented test results because the tests haven't happened yet. THERE IS NO WAY the EA can know for sure whether there will be significant or no significant impact to the environment. So, is the EA willing to risk the health of the citizens of Kanab based on the unknown???
- 37-02** 2. The next thing I notice is in the section "2.7.5 Decommissioning" – The EA basically states that the land will be returned to its original state after Viresco's 30 year lease has come to an end. First of all, Jim Guthrie, president of Viresco has categorically stated on a number of occasions that he has absolutely no intention of cleaning up after the Pilot Plant has completed its purpose. We do not want to leave our children and grandchildren with a pollution nightmare to clean up.
- 37-03** 3. I would like to know why Viresco wants to finds ways of "creating" methane when there is thousands of tons of methane readily available in the ground and water systems produced by the 10 billion animals slaughtered in factory farms each year. Would it not behoove the EA and the citizens of America to explore the possibility of harnessing the methane produced in factory farming? If this were possible, we would not be adding to the pollution problem in the US by burning rubber, coal and plastic to try and create methane and we would be addressing an existing pollution problem by harnessing the methane that already exists in the soil and water in the vicinity of factory farms.
- 37-04** 4. I want to know why the EA would support the archaic and dangerous practice of mining coal and why the EA would support the burning of such coal in a small town (Kanab) that is currently almost totally pollution free. This burning process WILL create pollution. I know what it's like to living in a coal mining and coal burning environment. I grew up in Yorkshire in England which was a heavily

Responses**Comment 37-01**

The response to comment number 6-02 explains the categories of impacts as described in the EA. The proposed Pilot Plant is intended as a demonstration facility, not an experimental facility. DOE considers the gasification process to be a potential future source for producing clean energy from coal and biomass when compared to conventional combustion processes. The Pilot Plant would demonstrate the process at a size that would provide economic performance data adaptable to a commercial-scale facility. Basic experimentation for the process was already completed in a laboratory model, but it is not directly scalable to a commercially economic size. NEPA requires federal agencies to conduct appropriate environmental reviews as part of their decisionmaking for proposed actions. DOE maintains that the Draft EA, as updated in the Final EA, appropriately describes the anticipated impacts of the proposed project in sufficient detail to support decisionmaking for DOE's proposed action.

Comment 37-02

The subject of this comment has been addressed in the responses to comment numbers 15-06, 24-03, 26-13, and 35-06.

Comment 37-03

As stated in Section 1.2 the objective of Viresco's proposed project is not to produce methane but to evaluate the technical feasibility of using steam hydrogasification to convert coal and/or biomass such as agricultural or wood processing waste into synthesis gas (syngas), and ultimately into clean fuels such as substitute natural gas, sulfur-free Fischer-Tropsch diesel, jet fuel, dimethyl ether, and methane.

Comment 37-04

As the U.S.'s most abundant fossil fuel resource, coal will continue to play an important role in the nation's energy supply. However, there is a need to address the associated environmental and climate change challenges related to the continued use of coal. Therefore, NETL has the responsibility to research and demonstrate cleaner processes for using coal as a fuel, including a broad spectrum of gasification technologies, of which the proposed Pilot Plant would demonstrate one. Because the Pilot Plant would gasify coal into a synthesis gas that would be combusted, the flare would be comparable to a natural gas flare and not to a "smokestack" associated with a coal combustion facility.

Commenter 37 – Lynda Marpole (continued)

**37-04
(cont'd)**

coal mining county until the coal mines were closed in the late 1970s. Almost everyone who grew up in that environment suffers from respiratory problems. I myself have chronic asthma. Why would the EA want to expose the residents of Kanab to the hazardous process proposed by Viresco? It's about time the EA and the USA moved into the 21st Century and abandon the archaic and dangerous coal mining and coal burning practices that were abolished in the UK over 30 years ago.

37-05

5. Another issue; The government has "ear-marked" over \$2M to subsidize Viresco's project. That's \$2M that will literally go up in flames. This project will not create jobs for the people of Kanab because Jim Guthrie has stated he will bring his own people in. This \$2M could be better spent on taking care of the homeless and hungry people in Utah. It is shameful that the EA would approve the spending of \$2M on a wasteful project when there are so many homeless and hungry adults and children in Utah.

37-06

6. Has the EA asked Viresco if the project would still go ahead without the \$2M government money? If the answer is no – then how important really is this project?

37-07

7. Has the EA asked the Kanab City Council – who tried to fast-track the approval of the Viresco project without the knowledge of the citizens of Kanab – what they and Viresco are hiding? They MUST be hiding something; otherwise why was the project hidden from the citizens of Kanab and why, when the citizens of Kanab found out, have the Kanab City Council members continued to push this project through despite all the letters against the project to the editor of the local newspaper, all the protests and the legal action the citizens are taking against the members of the Kanab City Council. As we say in England, "the whole situation smells a funny color"

Bottom line – the majority of the citizens of Kanab DO NOT WANT the Viresco plant to be built in their beautiful, quiet, pollution free town!!!!!!!!!!

Thank you for taking the time to read my email. I really hope the EA will do what is best for the citizens of Kanab and that is not to approve the Viresco pollution generating plant.

Sincerely

Lynda Marpole – resident of Kanab (Hillside Drive)

From: Joseph Zambelli [mailto:Joseph.Zambelli@NETL.DOE.GOV]
Sent: Friday, August 12, 2011 11:59 AM
To: Joseph Zambelli
Subject: Draft EA for the Utah Coal and Biomass Fueled Pilot Plant

Dear Reader,

The attached file provides the main text of Draft Environmental Assessment (EA) for the Utah Coal and Biomass

Responses

Comment 37-05

The subject of this comment has been addressed in the response to comment number 8-01.

Comment 37-06

The subject of this comment has been addressed in the response to comment number 8-01.

Comment 37-07

Comment noted.

Commenter 38 – Lee R. Hurd

Joseph Zambelli - Kanab Coal Gasification Plant

From: "Lee Russell-Hurd" <leestilesrh@gmail.com>
To: "joseph.zambelli" <joseph.zambelli@netl.doe.gov>
Date: 9/15/2011 4:53 PM
Subject: Kanab Coal Gasification Plant

Mr. Zambelli

How could the D.O.E. grant such a good environmental assesment of the proposed plant in Southern Kanab when the results and information were gathered by Viresco itself? Look, the majority of the citizens in the Community don't want this project to go any further, and although Mr. Guthrie may have the town officials in his pocket, the money to make the plant operational despite the opposition to it, and apparent power to convince you and others that an experimantal plant to make dirty coal a little less dirty will be beneficial to the community, this is still America, and we won't be silenced on this issue. I had to stomach the fact that close to the proposed Plant site in the last few years Puebloan Ruins were destroyed to make a superfluous reservoir, then us citizens watched the city use federal money to build a new jail that won't add but a few jobs, and now it appears that an environmental mess and unneeded eye soar will be part of the view coming north into town from Arizona. Bye bye tourists dollars, bye bye relatively pollution free high desert and so long citizens, since I and others are considering moving out of town if said project is completed. Now hopefully that won't happen, since I and the myriad other citizens in kane County will keep up the good fight untill the end, There is no such thing as clean coal! and I don't want Kanab to become Page, AZ, dominated by a giant smoke stack and billows of pollutnats blanketing the cliffs from the Navajo generating plant. Please review this case.

Lee R.Hurd
Kanab, UT
www.kanabcares.org

38-01

Responses

Comment 38-01

The subject of this comment regarding aesthetics has been addressed in the response to comment number 15-07. The subject of this comment regarding tourism has been addressed in the response to comment number 21-03.

Commenter 39 – Russell Beesley

From: <tlc1@xpressweb.com>
To: "Joseph Zambelli" <Joseph.Zambelli@NETL.DOE.GOV>
Date: 9/15/2011 9:15 PM
Subject: Draft EA for the Utah Coal and Biomass Fueled Pilot Plant

Sept. 15, 2011

Russell Beesley
 53 South 200 East
 Kanab, UT 84741

Dear Joe,

I have read the EA by the Department of Energy for the planned experimental coal gasification plant to be built in Kanab, Utah and have many grave concerns. DOE/EA-1870D "Utah Coal Biomass Fueled Pilot Plant" Kanab, Utah raises some big questions and failed to adequately answer them. For this reason I believe DOE should grant a time extension so that more research can be completed assessing the major effects this project will have on the community of Kanab.

39-01 And because of the amount of controversy this action has caused, I believe a full EIS needs to be completed in order for the project to move forward. As a businessman in Kanab, known for its scenic beauty, why build an industrial plant, that will offer few jobs (9) be an eyesore, and foul the air and water and destroy wildlife habitat.

39-02 Why was not another alternative location considered? The earmark by then Senator Bennett just says Utah, why Kanab? Less than 5 miles away is another abandoned industrial oil refinery that has stood vacant for the last dozen years. Your EA says Viresco will be responsible for the decommissioning after its lease is up, IN 30 YEARS, will Jim Guthrie still be around and alive to make sure that happens!

39-03 DOE has not given the Kaibab Palute Tribe a fair hearing in this matter. Their comments should be fully acknowledged and a full EIS should be conducted to address their concerns. Over 50 bodies were dug up during the construction of Mike Noel's Evaporation Pond (sic) Jackson Flat Water Supply Storage Project, and the remains tossed into a shipping container. This is hardly the respect that Native Americans surely deserve after the Europeans took and settled their common lands.

39-04 Do the people of Los Angeles and Phoenix know that waste water could work its way into their drinking supply? Your analysis that water resources will be "returned to the environment" is unclear and the site plans show no evaporation pond so the waste water will then what, roll downhill?

39-05 With regard to the GHG's the 543 tons that this plant will produce is unacceptable given the grave situation this Nation and the World has to address

Responses**Comment 39-01**

The response to comment number 20-01 addresses the subject of an extension to the commenting period. The subject of preparing an EIS has been addressed in the response to comment number 12-01.

Comment 39-02

The subject of this comment has been addressed in the response to comment number 8-01. As stated in response to comment number 24-03, Section 2.7.5 was revised to include a discussion of specific decommissioning activities that would occur.

Comment 39-03

The subject of this comment has been addressed in the responses to comment numbers 24-07, 34-07, 56-03, and 56-10.

Comment 39-04

Under the 30-day duration for the proposed action, the process water would be recycled back into the gasification system, and not discharged to any surface water. As a connected action, Viresco could choose to operate for 130 days, and would then construct an evaporation pond to hold excess process wastewater as it evaporates. The statement "returned to the environment" means that the process wastewater would be evaporated in the evaporation pond, not discharged to a surface body. Under the connected action, process wastewater could also be discharged to the Kanab sewer system (see response to comment number 9-01), which would not require an onsite evaporation pond.

Comment 39-05

According to CEQ's draft NEPA guidance on "Consideration of the Effects of Climate Change and Greenhouse Gas Emissions," if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of CO₂-equivalent greenhouse gas (GHG) emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decisionmakers and the public. Emissions from the proposed Pilot Plant would be far below this threshold. Class I areas are addressed in Section 3.5.1 of the EA. See also the response to comment 47-03.

Commenter 39 – Russell Beesley (continued)

**39-05
(cont'd)**

with climate change.

And with respect to air quality you failed to consider in your classification of Class I sites the Monuments of Grand Staircase-Escalante, Vermillion Cliff, Grand Canyon Parashyants, and the Glen Canyon Recreation Area, all closer to this plant than Arches! Were the above managers contacted?

39-06

The plant stack to be above the 40 foot height limit is NOT a desirable object for viewing in a community that prides itself on its wonderful "Greatest Earth On Show." The citizens of Kanab were not adequately informed when that conditional use permit was issued.

39-07

DOE should take the 2 and a half million dollars it plans to give to Jim Guthrie and return it to the Treasury so we can pay down the National Debt.

This Coal Gasification Plant is a scam for a few to take money from hard working Americans to line their own pockets with an EXPERIMENT!!!

Thank You,
Russell M Beesley

Responses

Comment 39-06

The subject of this comment has been addressed in the responses to comment numbers 21-03 and 32-03. Likewise, decisions about the conditional use permit are within the jurisdiction of the city government.

Comment 39-07

Comment noted.

Commenter 40 – Rich Csenge

Joseph Zambelli - Comments on the DOE Environmental Assessment of the Utah Hydrogasification Plant

From: "Rich Csenge" <jiw@gwi.net>
To: <joseph.zambelli@netl.doe.gov>
Date: 9/15/2011 11:22 PM
Subject: Comments on the DOE Environmental Assessment of the Utah Hydrogasification Plant
Attachments: Comments on the DOE's EA for the Viresco Gasification Plant.doc

40-01

Mr Zambelli,
Attached are my comments on the Utah Hydrogasification Plant being proposed for Kanab. I await your response and suggest that an alternative be created for this research project to be re-located away from Kanab City, and that a full EIS be conducted.
Sincerely,
Rich Csenge
75 South 100 West,
Kanab, Utah 84741
435-644-3735

Responses

Comment 40-01

The subject of this comment has been addressed in the responses to comment numbers 12-01.

Commenter 40 – Rich Csenge (continued)**9-15-11****Comments on the Draft Environmental Assessment for the Viresco Hydrogasification Plant**

For your convenience as a reference I have included my previously entered scoping comments at the bottom of this document.

Rich Csenge
75 South 100 West,
Kanab, Utah 84741

40-02

This EA does not adequately address many of the scoping comments which I and others provided on the Viresco project. For the reasons listed below I find the DOE Draft EA on the Viresco project and its suggestions of “minimal” to “negligible” impacts for virtually every point of analysis upon the residents of Kanab to be deficient, and an obvious attempt to forcefully advance an earmarked energy development project into the rural community of Kanab, Utah, where the majority of residents are opposed, as expressed by their concerns listed in Table 1.4.1 of the EA. It is a conflict of interest for DOE, which has a stated objective to develop and promote coal gasification as an alternative “clean technology” to the burning of fossil fuels, to be conducting this EA. Therefore this EA cannot be objective and is flawed.

40-03

To my knowledge, BLM which administers the Grand Staircase Escalante National Monument immediately downwind of the proposed Viresco project as part of the National Landscape Conservation System, has not conducted a complete analysis of impacts to GSENM from the proposed Viresco project, but should do so.

40-04

This EA is inadequate. A FONSI should not be issued, and the process should be moved to an EIS, in accord with figure 1.1 of the EA.

Below are my comments addressing specific sections of the EA.

Text from the EA Section 1.1

Viresco would be responsible for the disposal of the solid waste (i.e., coal ash)

Comment on the EA Text Above

40-05

Once this ash is deposited at the Kane County Landfill, if that is to occur, then the City and County will become responsible for the hazards of coal ash, which would present a significant impact to the community. The question of where such hazardous materials shall be disposed of is inadequately addressed in this EA.

Text from the EA Section 1.5

Comments Received and Issues Identified During the Scoping Period

Some commenter's expressed support for the Pilot Plant, primarily for the technological aspects, including potential environmental benefits of clean domestic fuels and the use of renewable biomass. The majority of commenters expressed opposition to the Pilot Plant, primarily based on concerns about air quality, odors, visual aesthetics, effects on local economy (as a result of decreased tourism), among others. In all, 192 separate submissions of oral and written comments were received from a total of 146 individual commenters. Many commenters addressed multiple issues, resulting in a total of 803 comments on

Responses**Comment 40-02**

Comment noted.

Comment 40-03

The Draft EA was distributed to the BLM Kanab Field Office. The comments received from that office are included as comment numbers 47-01 through 47-06.

Comment 40-04

Comment noted

Comment 40-05

The subject of this comment has been addressed in the response to comment number 15-09.

Commenter 40 – Rich Csenge (continued)

specific issues.

Comment on the EA Text Above

40-06

THE EA FAILS TO IDENTIFY The actual number of commentors who expressed support compared with those who expressed opposition. The fact is that opposition is tremendous while support rests with a very few residents – notably, city officials, and this should be stated. Because of the tremendous opposition to this project, the negative socioeconomic impact to the residents of Kanab should be considered “significant” rather than “moderate” or “minimal”.

Text from the EA Section 2.3

DOE's Proposed Action is limited to providing financial assistance to Viresco in a cost-sharing arrangement to meet the requirements of a Congressional enactment in Fiscal Year 2010 Appropriation Act and its accompanying conference report. Therefore, DOE's decision subject to NEPA is limited to either accepting or rejecting the project as proposed by the proponent and specified by Congress, including its proposed technology and selected site. DOE's consideration of reasonable alternatives in this case is therefore limited to the Proposed Action and the No Action Alternative.

Comment on the EA Text Above

40-07

THE EA FAILS TO IDENTIFY a third alternative that would re-locate the Viresco Plant away from the population center of Kanab City, to a more appropriate site outside of Kanab City but somewhere in Utah, where cumulative impacts would be diminished on air quality for example, and other undesirable and harmful impacts considered “moderate” in section 3.1.2, after the initial 30 day DOE period of oversight has expired.

Text from the EA Section 2.5.1

Coal would be delivered to the site pre-ground, although Viresco is considering adding coal grinding for future operations (see Section 2.8 Consideration of Connected Actions).

Comment on the EA Text Above

40-08

In initial Kanab City Planning discussions, members had serious concerns about the grinding of coal at the plant, and were assured by Viresco that coal would be delivered already ground in sealed bags. Grinding coal presents additional hazards to human health for residents of Kanab. This matter is not adequately addressed in the draft EA.

Text and references from the EA Sections 2.8 and 2.9.3

Under the cooperative agreement with DOE, Viresco would operate the Pilot Plant and collect data for a series of test runs totaling 30 days of operation over a period of months. After the DOE's financial assistance ends, Viresco plans to seek additional funding for continued operations. Viresco's plans for operating its facility after DOE's involvement ends are not well-defined and would depend on the objectives the provider of any additional funding sought to achieve. However, it is likely that any future operations would continue to test the gasification process in order to improve its operation and output to achieve high process efficiency. Viresco has informed DOE that it intends to operate its Pilot Plant for a maximum of 130 days during a calendar year. This EA analyzes the possibility that Viresco may operate its facility for as many as 130 days annually after DOE's involvement ends as a connected action.

Depending upon the results of analysis, excess process wastewater could be discharged to the City sewer system or removed by commercial services for appropriate disposal. Potential impacts of this option for wastewater management are addressed as connected action impacts in Section 3.6, Groundwater, and Section 3.8, Utilities.

In the future, Viresco may also consider adding some form of gas cleanup processing and hydrogen separation. The details regarding these additional processes are not available at this time and would depend upon the availability of funds from other sources and the objectives those sources sought to achieve with their funding. Therefore, potential impacts associated with these processes are not addressed in this EA, because they cannot be identified or analyzed at this time.

Section 2.9.3

There are no catalogued lakes or reservoirs in the drainage basin. (UDNR/DWR, 2007).

Table 2.7-3. Comparison of Proposed Project and Future Operations Components

Responses

Comment 40-06

In Section 1.5 the Draft EA stated that the “majority of commenters expressed opposition to the Pilot Plant”. There is no requirement in the NEPA legislation or in the CEQ or DOE NEPA regulations to include a “tally” of the number of comments in favor or opposed to a particular action. NEPA reviews are intended to provide an opportunity for public involvement and informed decisionmaking by federal agencies. The response to comment number 6-02 explains the definitions of impacts used by DOE in the EA.

Comment 40-07

The subject of this comment has been addressed in the response to comment number 8-01.

Comment 40-08

The response to comment number 27-05 addresses the subject of potential future coal pulverization at the proposed Pilot Plant site.

Commenter 40 – Rich Csenge (continued)

Comments on the EA Texts and table above and texts below

40-09

THE EA IS FLAWED AND FAILS TO IDENTIFY and account for indirect impacts to Jackson Flat Reservoir now under construction, which is less than one mile from the site and directly downwind in prevailing Southwesterly winds, and will receive deposition of wind blown dust residues from evaporation ponds and fallout from stack emissions.

If Viresco's future plans are "not well defined" as stated above, how can DOE say impacts will be minimal, and why is taxpayer funding being directed to this project?

Text:

Air emissions Most notable emission would be of carbon monoxide and is estimated to be less than 4 for the 30 days of operation..

Most notable emission would be of carbon monoxide and is estimated to be less than 15 tons for 130 days of operation.

Response:

Tons of the lethal gas carbon monoxide (CO) released into Kanab City air is not harmful? Further discussion of this impact is imperative, and CO is just one of many HAPs that will be emitted.

40-10

Why are not all HAPs compounds contained in the air emissions listed in 2.7.3 and their impacts analyzed, including H₂S, NO_x, SO_x, Dioxin and Furans?

Excess process water to be discharged into Kanab City sewer system? This needs further impact analysis.

Text:

Solid Waste 1,166 pounds of ash per day, Total of 26 tons including fines for 30 days of testing. Would be collected, analyzed, and disposed of in an appropriate landfill

Total of 113 tons, including fines, for 130 days of testing. Would be collected, analyzed, and disposed of in an appropriate landfill

Response:

40-11

Is any of this ash to be disposed of in the Kanab City landfill? If so, the EA analysis is flawed and inadequate.

Text from the EA Section 3.1.1

The Kanab Land Use Ordinance does not include permitted uses that would specifically address the project, however, the most applicable use would be "miscellaneous light manufacturing", which is permitted in the M2 designation. Structures within 100 feet of adjoining zones are not allowed to have heights greater than those allowed in the adjoining zone. Properties adjacent to the site are zoned RR-1, which allows buildings up to a height of 40 feet. A conditional use permit was approved by City of Kanab Planning Commission on July 20, 2011 enabling Viresco to exceed height limits otherwise applicable to the Pilot Plant.

Comment on the EA Text Above

40-12

Many Kanab residents and I are convinced that the zone change and permitting of this facility is flawed and even unlawful, as cited in the lawsuit being brought against the City of Kanab by the Kane County Taxpayers Assn. **GASIFICATION OF COAL AND OTHER FEEDSTOCKS, RELEASING TOXIC POLLUTANTS AND FLARING NOXIOUS GASSES, GENERATING TOXIC ASH CONTAINING HEAVY METALS AND RADIONUCLIDES CAN NOT BE REASONABLY CONSIDERED AS LIGHT MANUFACTURING, NO MATTER HOW SMALL THE APPLICATION!**

Additional Text:

Properties adjacent to the 10-acre parcel to be leased by Viresco are zoned RR-1. Kanab's future land use map, dated 2007, has the entire area south of the northern boundary of the airport on the east side of US 89A planned for the RR-1 zoning designation or Planned Parks, however, this area also includes the properties containing the safety facility (under construction), the landfill, and the rodeo facilities. Construction has commenced on a new surface water reservoir (the Jackson Flat Water Supply Storage Project) on Jackson Ranch approximately 0.25 mile north of the site (Figure 3-5). Kanab is planning to develop recreational facilities around the reservoir

Responses

Comment 40-09

The subject of this comment has been addressed in the responses to comment numbers 13-01 and 18-02.

Comment 40-10

As stated in the Draft EA, with regard to HAPs, high molecular weight organic compounds or toxic metals would not be expected in quantities that would pose a health hazard, based on the combustion efficiency of the flare and the small concentrations of metals in the feedstock to the gasifier.

Comment 40-11

The subject of this comment has been addressed in the response to comment number 15-09.

Comment 40-12

As stated in responses to comments 15-17 and 32-03, DOE considers land use planning and zoning decisions to be under the jurisdiction of the Kanab City Planning and Zoning Department. That department determined that the Pilot Plant is consistent with the zoning designation of the site and the master plan.

Commenter 40 – Rich Csenge (continued)

including three parks, the closest of which would be approximately 0.6 mile to the northeast of the site. In addition, an Outfitter's Post, race track, archery and shooting range, and rodeo are also part of the plan; however, these plans are conceptual and a more definitive plan for the recreational area is expected at a later date.

Comment on the EA Text Above

From a sociological and community planning perspective, the above statements verify that the Viresco project is inappropriately sited! City officials are obviously being pushed by higher-level government officials to accept and expedite this project, and seem all too willing to violate the intent of Kanab City ordinances and long-term planning to accommodate it. This EA should be giving much more serious consideration to the misguided site location as a significant impact upon the residents of Kanab.

40-13

Text from the EA Section 3.1.2 Environmental Consequences of the Proposed Project

The proposed project would result in the conversion of approximately 1.5 acres of undeveloped vegetated land to facilities to support the Pilot Plant (see Figures 2-3, previous). Although surrounding lands are zoned RR-1, the properties in the immediate vicinity of the site are undeveloped, and an existing landfill and safety facility (under construction) are in close proximity. Thus, construction and operation of the Pilot Plant would be considered compatible with existing land uses in the area; however, Kanab's future plans for the area within 0.25 miles to the north of the site include recreational land uses. Use of the site for an industrial facility (the Pilot Plant) would not be considered compatible with recreational sites, such as parks, primarily due to diminished aesthetic quality (see Section 3.2, Aesthetics).

Overall, minor adverse impacts to adjacent land uses would be expected for the 30 days of operation during the period of the cooperative agreement with DOE due to the short and intermittent operational duration. The Pilot Plant would be a permanent, non-natural object in the viewshed; however, operational effects would be of a very short and intermittent duration.

Should future operations include operating the Pilot Plant for up to 130 days annually for an undetermined period into the future, impacts would be moderate, so any possible operational effects would occur more often and for a longer period of time.

Comment on the EA Text Above

What is the basis for the designation of "Moderate" impacts for operations beyond the first 30 days including process runs of up to 130 days, rather than "Significant" impacts? There is no analysis here of this distinction, which represents a flaw in this EA. The aesthetic and sociological impacts alone should constitute a "Significant Impact", given the proximity of so many national parks, forests and monuments, which are the reason and major support for Kanab's clean, perpetual and growing economy.

40-14

Text from the EA Section 3.2.2 Environmental Consequences of the Proposed Project

A potential minor vapor plume emission may be visible from the surrounding area when operating under certain weather conditions. However, as the Pilot Plant would operate intermittently and over a relatively short duration (30 days of operation under the cooperative agreement with DOE), the occurrence of a visible vapor plume would be occasional and limited in duration. Offensive odors are not anticipated, but any odors would be expected to dissipate effectively before reaching any residential area given the isolated location of the Pilot Plant in proximity to a sanitary landfill. Viresco would make every practicable effort to avoid creating noise, exhaust emissions, and odors at the site. In addition, Viresco would comply with Chapter 10 of Kanab's Land Use Ordinance, which sets restrictions on nuisances (e.g., odors) and physical hazards on industrial properties (City of Kanab, 2009).

Overall, minor adverse aesthetic impacts to the planned recreational facilities would be expected for the 30-day operational period of the proposed project due to the short and intermittent operational duration. The Pilot Plant would be a non-natural object in the viewshed; however, operational effects would be of a very short and intermittent duration. Should Kanab choose to locate recreational facilities further from the Pilot Plant than current plans indicate, impacts would be less; however, it is currently unknown what the final locations would be.

Comment on the EA Text Above

30 days of operation under the cooperative agreement with DOE is cited as the period of operation while thereafter, it will operate for many years including continuous runs of as many as 90 days. Originally, the developer stated that the longest runs would be 80 days. This developer,

40-15

Responses

Comment 40-13

As stated in the response to comment number 8-01, the purpose and need for DOE's proposed action is to satisfy a Congressional earmark. DOE did not select this project or the proposed site under either a competitive or a non-competitive procurement and had no role in enacting the earmark. The earmark calls for DOE to grant financial assistance for the project as proposed. Viresco had already selected the technology for the project before the earmark was enacted. Viresco has not identified alternative sites, technologies or utilities other than those addressed in the EA. Alternatives still under consideration by Viresco or reasonably within the confines of the project as proposed have been evaluated in the EA, along with the no action alternative.

Comment 40-14

DOE concluded that the impacts of the proposed Pilot Plant operations on land use would not be significant based on the following considerations: (1) The Pilot Plant would be consistent with the revised zoning classification of the site as M2. (2) The conditional use permit would allow the height of the Pilot Plant structure to exceed the height limitation that would otherwise be applicable to the facility because of adjacent zoning. (3) The Pilot Plant would not be visible from National Parks or National Recreation Areas based on maximum facility height and distance to these areas. (4) Although the Pilot Plant would be visible from the Jackson Flat Water Supply Storage Project, the recreational areas associated with that project are conceptual and can be modified or designed to minimize visual intrusion of the Pilot Plant. The response to comment number 6-02 explains the definitions of impacts used by DOE in the EA.

Comment 40-15

The subject of this comment has been addressed in the response to comment number 6-01.

Commenter 40 – Rich Csenge (continued)

**40-15
(cont'd)**

Mr Guthrie, continues to change his story as he works to persuade officials and residents to accept his proposal.
A UDAQ engineer testified in Kanab at the County Courthouse that Hydrogen Sulfide gas would be emitted from the stack, which carries a foul odor, yet the EA states that offensive odors are not anticipated. It is simply not credible to suggest that coal can be gasified without emitting any odors! This is a contradiction that must be resolved in an EIS.

40-16

If Kanab recreational facilities are to be constructed near the Viresco site, residents using them will be harmed by pollution from the plant. This potential impact should also be given more scrutiny.

Text from the EA Section 3.5.2 Environmental Consequences of the Proposed Project

Short- and long-term minor adverse effects on air quality would be expected from the proposed project. The effects would be from air emissions during construction, and from the operation of the proposed coal/biomass fueled Pilot Plant. Increases in emissions would be de minimis (of minimal importance) and would not contribute to a violation of any Federal, state, or local air regulation. New stationary sources of air emissions associated with the project would not exceed the major source threshold and would not be large enough and/or close enough potentially to affect a Class I area.
Notably, no coal or biomass would be directly combusted at the proposed facility. All operations would be on a testing scale, and full-scale production or storage of any fuels or materials would not be conducted at the site. The total amount of emissions from the facility would be very small, and the emissions would not be toxic in nature. Offensive odors are not anticipated but any odors would be expected to dissipate effectively before reaching any residential areas given the isolated location of the Pilot Plant therefore no detrimental effects and no adverse effects to human health or welfare are anticipated. The facility neither would introduce localized hot spots of air pollutants, nor jeopardize the attainment status of the region.

Comment on the EA Texts Above

The emissions “would not be toxic in nature”? This is an incredible statement and contradicts the HAPs information contained in section 2.7.3 of the EA. The above statements appear to address only the impacts that will occur within the thirty days that DOE is involved with the Viresco project. Again, what about the 90-day process runs that will follow within a projected 130-day operation period annually? Simply assigning a “moderate” level impact for these longer runs and for long-term cumulative effects is unconvincing and unscientific in light of the vapor plume and odors that will be emitted. In a public meeting held in Kanab at the Kane County Courthouse in February 2011, UDAQ representatives stated that H₂S will be emitted from the plant and that it will smell bad, especially in winter conditions of inversion, when smoke stays low to the ground. At a later public meeting at Kanab High School, NETL’s Dr. Richard Boardman stated that as the process is ramped up for a test and shut down after a test, inefficient combustion will result in several days of excessive smoke, above what would be normal in the middle of a test cycle. This matter also does not appear to have been addressed in the EA.

40-17

Text from the EA Section 3.5.1.2 Climate and 4.2.6 Greenhouse Gases (GHG) and Climate Change

The proposed facility is in Kane County, Utah with little development beyond nearby farms and scattered homes. Surface elevations in the area range from about 4,900 to 5,040 feet above mean sea level, and topography in the area consists of gently rolling hills and valleys with scattered lakes. Kanab, Utah, the largest city in Kane County, has an average high and low temperature in the coldest month, January, of 47.3 °Fahrenheit (°F), (8.5°Celsius (°C)) and 21.9°F (-5.6°C), respectively, and an average high and low temperature in the warmest month, July, of 90.8°F (32.6°C) and 56.8°F (13.7°C), respectively. Kanab also has an average annual precipitation of 14.9 inches per year. The wettest month of the year is March with an average rainfall of 1.9 inches (Idcids, 2011).
GHG’s are components of the atmosphere that trap heat relatively near the surface of the earth and, therefore, contribute to the greenhouse effect and global climate change. Most GHGs occur naturally in the atmosphere, but increases in their concentrations result from human activities such as the burning of fossil fuels. Global
Draft EA for Utah Coal and Biomass Fueled Pilot Plant (DOE/EA-1870D) August 2011

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Responses

Comment 40-16

The subject of this comment has been addressed in the responses to comment numbers 13-01, 34-06, and 18-02.

Comment 40-17

Text in Section 3.5.2 was updated for clarity to read: "The total amount of emissions from the facility would be very small, and not appreciably effect air quality."

The remaining subjects of this comment have been addressed in the responses to comment numbers 13-01 and 34-06.

Commenter 40 – Rich Csenge (continued)

temperatures are expected to continue to rise as human activities continue to add carbon dioxide, methane, nitrous oxide, and other greenhouse (or heat-trapping) gases to the atmosphere. Human health, agriculture, natural ecosystems, coastal areas, and heating and cooling requirements are examples of climate-sensitive systems. Some observed changes include shrinking of glaciers, thawing of permafrost, later freezing and earlier break-up of ice on rivers and lakes, lengthening of growing seasons, shifts in plant and animal ranges and earlier flowering of trees (USEPA, 2007; IPCC, 2007).

Federal agencies, states, and local communities address global climate change by preparing GHG inventories and adopting policies that would result in a decrease of GHG emissions. The President's CEQ recently released draft guidance on when and how Federal agencies should consider GHG emissions and climate change in NEPA. The draft guidance includes a presumptive effects threshold of 25,000 metric tons of carbon dioxide equivalent emissions from an action (CEQ, 2010).

4.2.6

According to the IPCC fourth assessment report, "warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level" (IPCC, 2007b). The IPCC report finds that the global average surface temperature has increased by approximately 0.74 degrees Celsius (°C) in the last 100 years, global average sea level has risen approximately 150 millimeters over the same period, and cold days, cold nights, and frosts over most land areas have become less frequent during the past 50 years. The report concludes that most of the temperature increase since the middle of the twentieth century "is very likely due to the observed increase in anthropogenic [GHG] concentrations."

The IPCC 2007 report estimates that, at present, CO₂ accounts for approximately 77 percent of the climate change potential attributable to anthropogenic releases of GHGs, with the vast majority (74 percent) of this CO₂ coming from the combustion of fossil fuels. IPCC and the U.S. Climate Change Science Program (CCSP) examined the potential environmental impacts of climate change at global, national, and regional scales. IPCC's report states that, in addition to increases in global surface temperatures, the impacts of climate change on the global environment may include:

- More frequent heat waves, droughts, and fires.
- Rising sea levels and coastal flooding; melting glaciers, ice caps, and polar ice sheets.
- More severe hurricane activity and increases in frequency and intensity of severe precipitation.
- Spread of infectious diseases to new regions.
- Loss of wildlife habitats.

• Heat and respiratory ailments from higher concentrations of ground-level ozone (IPCC, 2007b).

On a national scale, average surface temperatures in the United States have increased, with the last decade being the warmest in more than a century of direct observations (CCSP, 2008). Impacts on the environment attributed to climate change that have been observed in North America include: • Extended periods of high fire risk and large increases in burned area • Increased intensity, duration, and frequency of heat waves • Decreased snow pack, increased winter and early spring flooding potential, and reduced summer stream flows in the western mountains. • Increased stress on biological communities and habitat in coastal areas (IPCC, 2007b).

The U.S., and particularly southwest region where the proposed project would be located, has experienced locally severe economic damage, plus substantial ecosystem, social and cultural disruption from recent weather-related extremes, including hurricanes, other severe storms, floods, droughts, heat waves, and wildfires. Climate change will constrain the southwest's over-allocated water resources, increasing competition among agricultural, municipal, industrial and ecological uses. Hot temperatures and extreme weather are likely to cause increased adverse health impacts from heat-related mortality, pollution, storm-related fatalities and injuries, and infectious diseases. In the U.S. and particularly the southern states, disturbances such as wildfire and insect outbreaks are increasing and are likely to intensify in a warmer future with drier soils and longer growing seasons (IPCC 2007b).

Because climate change is a cumulative phenomenon produced by releases of GHGs from industry, agriculture, and land use changes around the world, it is generally accepted that any successful strategy to address it must rest on a global approach to controlling these emissions. In other words, imposing controls on one industry or in one country. During the demonstration period, the proposed project would contribute about 543 tons of GHG emissions to the atmosphere.

Comment on the EA Text Above

The EA states that there is little development in the vicinity of the proposed plant "except nearby farms and scattered homes". This statement is false. In fact the site is within the city limits of Kanab, which contains 4,300 persons dwelling in the historic downtown area and numerous subdivisions within one to two miles of the proposed plant.

Furthermore, farmland should be protected from harmful deposition of toxins from the plant. There isn't much arable land in Kane County and all of it lies near Kanab City, due north and downwind of the proposed plant, and therefore is threatened by toxic pollution from the proposed plant in the form of fallout from stack emissions and windblown dust from the residue of the evaporation ponds.

Responses

Comment 40-18

The response to comment number 6-04 addresses the concerns about the Pilot Plant's proximity to residential areas and potential health effects. DOE considers the proposed gasification process to have the potential for producing clean energy from coal and biomass when compared to conventional combustion processes. The Pilot Plant would demonstrate the process at a size that would provide economic performance data adaptable to a commercial-scale facility. DOE's experience with gasification technology does not support the claims made in this comment about carbon dioxide emissions from gasification technologies in comparison to coal combustion. The response to comment number 12-01 addresses the request for an EIS.

Commenter 40 – Rich Csenge (continued)

Responses

40-18
(cont'd)

My concerns as stated in my scoping comments about the harm to Earth's atmosphere from the continued use of fossil fuels have not been sufficiently addressed in this EA. Gasification of coal is generally accepted in scientific circles to produce 18 to 20% more CO₂ than simply burning the coal. Since the burning of fossil fuels including coal is the largest contributor to worldwide climate change and global warming as stated in this EA, why is DOE pursuing a technology in Kanab, Utah, that generates even more CO₂ per ton of coal processed, than does burning the coal? The term "clean coal" misrepresents gasification, from the perspective of CO₂ emissions. This project deserves greater scrutiny in a full EIS.

Text from the EA Section 3.5.2.2 Regulatory Review

Stationary sources of air emissions associated with a proposed project may be subject to Federal and state air permitting regulations. These requirements include, but are not limited to, minor new source review (NSR), *Draft EA for Utah Coal and Biomass Fueled Pilot Plant (DOE/EA-1870E), August 2011*

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prevention of significant deterioration (PSD), and new source performance standards (NSPS) for selected categories of industrial sources. The proposed facility would have emissions so low that they would be exempt from the air permitting requirements R307-401-5 through 8, Permit Notice of Intent thru Approval Order, hence, no Permit to operate it would be required. The facility would fall under the small source exemption (R307-401-9), which allows very small sources of air pollution greater flexibility to make changes in their emissions as long as they remain eligible for the exemption. Under this exemption, the facility would:

- 1) Emit less than 5 tpy of PM₁₀, SO₂, CO, NO_x, and volatile organic compounds (VOC);
- 2) Emit less than 500 pounds per year of any HAP, and less than 2,000 pounds per year for any combination of HAPs; and
- 3) Emit less than 500 pounds per year of any air contaminant not listed in (1) or (2) above and less than 2,000 pounds per year of any combination of air contaminants not listed in (1) or (2) above.

Viresco submitted a Small Source Exemption Registration, which was reviewed and approved by UDEQ, DAQ (UDEQ, 2010). A copy of the Small Source Exemption Registration and the UDEQ approval letter are in Appendix A.

Under the corrected action of possible future operation, the Pilot Plant may operate up to 130 days per year. If the Pilot Plant's total emissions under this scenario were to exceed the levels outlined in the small source exemption, the facility would need to obtain a minor source operating permit from UDEQ.

Comment on the EA Text Above

Where in the EA are the values for each HAP that will be emitted? Simply stating that levels will not exceed UDAQ annual maximums is insufficient. Residents are going to be exposed to HAPs if this project is built, up to 500 pounds per year of any single HAP and up to 2000 pounds of any combination of HAPs. What are they, and how much will be emitted? A proper environmental analysis must include this data, which is missing in this EA. Residents will be exposed to up to 5 tons per year of specific noxious pollutants as listed: PM₁₀, SO₂, CO, NO_x, and volatile organic compounds (VOC);

40-19

Kanab City is most densely populated within 2.5 miles of the proposed project and homes are as close as 1.1 miles downwind, and recreation sites such as the Jackson Flat Reservoir are within 0.25 miles of the site with additional facilities planned. The stated emissions represent hazards that do not currently exist for Kanab residents. The fact that existing coal-fired boilers in the elementary and high schools are already polluting the City's air is no reason to invite more of it from the Viresco project! The objective of Kanab residents who are concerned about this project is to maintain optimum conditions supportive of good health, not to be content to accept levels of new pollution that remain beneath state or federal threshold levels. The EA fails to address impacts on school

Commenter 40 – Rich Csenge (continued)

- 40-19 (cont'd)** | children attending Middle School and High School less than two miles from the proposed site.
- 40-20** | If constructed, this project would cause a decline in environmental quality for Kanab City residents that is not acceptable to many. There is “significant” and intense controversy about this matter as evidenced by continuing letters to the editor in opposition to the plant, lawsuits and legal appeals to zoning decisions, the unwillingness of City Officials to discuss the matter with local residents, and the recent Salt Lake Tribune editorial on the citizen’s ballot initiative to allow for a public vote on the project, to name specific instances. In such circumstances, DOE is required to conduct a full EIS where these levels of controversy are present.
- Text from the EA Section 4.25**
Air Quality
 The state of Utah takes into account the effects of all past, present, and reasonably foreseeable emissions during the development of the SSP. The state accounts for all significant stationary, area, and mobile emission sources in the development of this plan. Estimated emissions generated by the proposed project would be de minimis. Therefore, the proposed project would have minor adverse cumulative effects on air quality.
- Comment on the EA Text Above**
 Treatment of the cumulative effects of air pollution from the Viresco project on the health of the residents of Kanab City is not addressed in this EA. A full EIS must be conducted to determine the level of health hazard from HAPs emissions generated by the Viresco project. The fact that the project falls under the UDAQ Small Source Exemption is no reason to avoid due diligence in assuring Kanab City residents, many of whom have already existing respiratory conditions, that significant adverse health impacts will not occur. Children in school may be as significant risk from airborne pollutants. DOE is required to examine such impacts and has not done so in this EA.
- 40-21** |
- Text from the EA Section**
 4.2.10 Public Health and Safety
 No reasonably foreseeable actions have been identified that would interact with Viresco’s proposed project to generate cumulative adverse impacts to human health and safety.
 4.2.11 Socioeconomics and Environmental Justice
 The proposed project would contribute to cumulative positive revenue impacts for the state, county, and local governments. Increased employment and associated economic growth that could be associated with the Kane County Public Safety Facility and Jackson Flat Water Supply Storage Project would contribute cumulatively to these positive impact.
- Comment on the EA Text Above**
 Treatment of the issues in 4.2.10 and 4.2.11 is flawed because the EA does not consider the sociological strife that this proposal has caused in Kanab. Locating the Viresco facility in Kanab where people are unorganized and insufficiently capitalized to effectively oppose it is a case of environmental injustice.
- 40-22** |
- Text from the EA Section 5.3 Unavoidable Adverse Impacts**
Construction and operation of the proposed Pilot Plant would cause unavoidable air emissions.
- Comment on the EA Text Above**
 The EA fails to quantify the unavoidable impacts from air emissions, except to state that they will not exceed Small Source Exemption levels. This represents an insufficient analysis of the possible harm to public health from the emissions.
- 40-23** |

Responses

Comment 40-20

The subject of this comment has been addressed in the response to comment number 12-01. Public controversy alone is not the sole determining factor in whether an EIS is the appropriate level of environmental review for a proposed action.

Comment 40-21

The subject of this comment has been addressed in the responses to comment numbers 13-01, 40-10, and 18-02.

Comment 40-22

In Section 3.10.1.4, Environmental Justice, and Table 3.10-4, the Draft EA considered the potential for disproportionately high and adverse impacts to environmental justice populations. The project vicinity and the City of Kanab do not have poverty rates or minority populations higher than the county, state, and national levels. Therefore, the EA found no basis for potential environmental justice impacts from the project.

Comment 40-23

The assessment of effects to air quality includes the de minimis threshold values under the general conformity rule, a regulatory review, and effects from GHG. All components of the analysis (including the Small Source Exemption) indicate the level of effects would be less than significant. The remaining subjects of this comment have been addressed in the responses to comment number 13-01.

Commenter 40 – Rich Csenge (continued)**Responses**

For your reference, the full text of my scoping comments are pasted below. This EA is deficient in that the following points in my scoping comments were not adequately addressed:

- Impacts of processing tires, animal and landfill wastes and biomass.
- Section 1b and 1c below
- Section 2a, b, and c below
- Section 4a, b, c and d below
- Section 5a and b below
- Section 6 received no analysis
- Section 7b below
- Section 9a and b below
- Section 11a, and c below
- Section 12a below
- Section 13 below
- Section 14b below
- Section 15a and b below
- Section 17 below
- Section 19 below

This concludes my comments on the Utah Hydrogasification Facility EA. My scoping comments are enclosed below for your review.

To: Joseph Zambelli
 NEPA Document Manager
 U.S. DOE – National Energy Technology Laboratory
 3610 Collins Ferry Road
 PO Box 880
 Morgantown, WV 26507

**COMMENTS FOR THE US DEPARTMENT OF ENERGY PUBLIC
 SCOPING ON THE UTAH COAL AND BIOMASS FUELED PILOT
 PLANT ENVIRONMENTAL ASSESSMENT**

By Rich Csenge, 75 South 100 West, Kanab, Utah 84741 [Email: jiw@gwi.net](mailto:jiw@gwi.net)

For many reasons, a gasification plant located within the city limits of Kanab, Utah, even at R&D scale, to develop a process to convert coal, tires, animal and landfill waste, and biomass into synthetic fuels will cause unacceptable harm to the community, its economy, quality of life, and to its residents.

Commenter 40 – Rich Csenge (continued)

If the Viresco gasification facility is built in Kanab, my family’s health and business will be adversely impacted. We purchased property in Kanab, Utah in 2005, and have relocated our business to Kanab from Maine.

Following are the concerns I believe must be addressed in this Environmental Assessment, and which I am confident will lead to a finding of significant impact:

40-24

1. Violates the intent of the Kanab City Master Plan and land use ordinances.
 - a. Ignores community planning efforts, expectations and ordinances outlining desirable commercial and industrial development within M2 (Light Manufacturing) Zone “To provide space for small warehousing, light manufacturing, fabrication, wholesaling, service and other similar commercial establishments which are combined with one another and where they are convenient to the commercial areas in the City of Kanab”.
 - b. A gasification facility, whether R&D or full production scale, should be located in an M3 Zone. City Officials are attempting to permit this use in M2, which is an inappropriate interpretation of Kanab City Ordinance. See item #9 in this document.
 - c. Does not meet desirability criteria outlined in Kanab City Master Plan, for example, “In approving or recommending approval of a conditional use permit, the Kanab City Planning Commission or City Council shall find:
 - i. “That the proposed use is necessary or desirable and will contribute to the general well-being of the community”.
 - ii. “That the use will not be detrimental to the health, safety, or welfare of persons residing or working in the vicinity, or injurious to property or improvements in the vicinity”.
 - iii. “That the proposed use will comply with the regulations of this ordinance”.
 - iv. “That the proposed use is in harmony with the intent and purpose of the Kanab City Master Plan or that the plan shall have first been amended through a public hearing”.

40-25

2. Will negatively impact local public health.
 - a. Including increased asthma, cancer, and other diseases in the resident population from toxic air emissions.
 - b. Will present inhalation hazards from toxic dust residues from stored process water, blowing off the perimeter of the plant’s evaporation pond, toward residential districts of Kanab City.
 - c. Will cause City residents using wood-fired heating appliances to shut them down during periods of unacceptable air quality as deemed by Utah EPA.

40-26

3. Will cause harm to Kanab City Sewer lagoons.
 - a. Beneficial bacteria will be killed from toxic effluent discharge containing heavy metals into City sewer system.
4. Will substantially degrade air quality in Kanab City.
 - a. Hydrogen Sulfide emissions will cause Kanab’s air to smell bad.
 - b. Nitrous Oxides, Sulfur Dioxide, Dioxin and Furans will cause cancer and other respiratory diseases in the local population in future years.

Responses

Comment 40-24

The subject of this comment has been addressed in the response to comment number 32-03. DOE considers land use planning and zoning decisions to be under the jurisdiction of the Kanab City Planning and Zoning Department. That department determined that the Pilot Plant is consistent with the zoning designation of the site and the master plan.

Comment 40-25

The response to comment number 13-01 addresses the effects of air emissions on public health. The response to comment number 9-01 addresses the potential discharge of process water to the Kanab wastewater system.

Comment 40-26

The subject of this comment has been addressed in the responses to comment numbers 13-01 and 34-06.

Commenter 40 – Rich Csenge (continued)

- 40-26
(cont'd)
- c. The site is improperly located up-wind of the majority of City households.
d. During start-up and termination of each testing cycle, inefficiencies in the gasification process will result in toxic and foul-smelling smoke being released from the plant.
5. Will cause pollution of groundwater and Jackson Flat Reservoir.
a. The full range of heavy metals found in coal will steadily accumulate and poison aquatic life and persons who may eat fish caught in Jackson Flat Reservoir from particulates in stack emissions.
b. Excess on-site storm water runoff will result in evaporation pond overflow off-site during heavy rainfall events caused with increasing frequency by climate change.
c. Overflow of evaporation ponds will pollute local groundwater aquifers that will result in poisoning of artesian wells in Fredonia.
- 40-27
6. Will negatively impact real-estate values in Kanab City because persons seeking high quality of place, clean air and healthy lifestyles will avoid re-locating to Kanab.
a. Some existing residents of Kanab are already attempting to sell their homes and move out of Kanab City to escape the future negative health and economic impacts of a gasification plant located in Kanab.
- 40-28
7. Will harm tourism and local businesses depending upon tourism in Kane County and Kanab City because bad-smelling air will deter extended visitation by tourists.
a. Site is improperly located near US HWY 89-A at the southern gateway to Kanab City which negatively impacts visitor perceptions as they enter Kanab from the South.
b. Kanab's unique reputation among visitors to southern Utah as a community that markets itself as a world-class recreational destination due to its intrinsic natural beauty, its proximity to publicly administered natural amenities such as Zion, Bryce and Grand Canyon National Parks, the preservation of its Pioneer heritage, and its exceptional quality of life will be damaged.
- 40-29
8. Will impair valuable community assets of dark night skies and natural quiet.
a. Excess light pollution from industrial-scale safety lighting.
b. Continual noise from safety relief valves and stacks flaring toxic gases.
c. Noise and congestion from trucks servicing the facility.
9. Has already aroused a high level of discord within the community toward City Officials and other elected leaders.
a. Almost ninety percent of Kanab City residents are opposed to locating this industry within Kanab City limits.
b. Kanab City officials including Mayor, City Council and Planning Commission have angered and betrayed the trust of local residents by avoiding proper public disclosure of meetings to amend the City Master Plan, and change zoning to accommodate the developer's ambitions before residents realized the nature of the proposed development or could provide input, and by intentionally circumventing the desirability criteria of Kanab City Ordinances as noted in Item #1 at the top of this document through
- 40-30

Responses

Comment 40-27

The response to comment number 40-10 addresses the subject of toxic metals. Under the proposed action, Viresco would construct a stormwater retention structure that would be designed to hold stormwater runoff from the project, and minimize the potential for contamination from runoff. Viresco would be required to create and operate a SWPPP, which would minimize the potential for contaminants reaching Jackson Reservoir or the groundwater. Under the connected action, an evaporation pond could be constructed, however it would be bermed to prevent surface runoff into the pond, and minimize flooding during stormwater events.

Comment 40-28

The subject of this comment has been addressed in the response to comment number 26-10.

Comment 40-29

The response to comment number 21-03 addresses the potential effects on tourism. Facility lighting is discussed in Section 3.2.2, and the potential for noise impacts is discussed in Section 3.9.2 of the EA.

Comment 40-30

The subject of this comment has been addressed in the response to comment number 40-24. DOE has not participated in the planning and zoning decisions of the City of Kanab in any way.

The response to comment number 56-15 addresses concerns related to exposure of wildlife to the stormwater retention basin and potential evaporation pond at the Pilot Plant site.

Commenter 40 – Rich Csenge (continued)

- spot re-zoning to avoid the need for the developer to obtain a conditional use permit for the gasification plant which would have allowed the Planning Commission to attach conditions to an approval, and which would have subjected the developer to meeting additional criteria in Kanab City Land Use Ordinance Chapter 10 such as nuisance and performance standards for dangerous and objectionable elements.
- 40-30 (cont'd) 10. Will harm wildlife such as birds that may come in contact with produced water at the evaporation ponds.
- 40-31 11. Is out of character with regional aesthetic values and will harm world class recreational values of the region.
- Currently, Kanab City has no smokestack industries and derives most of its economic revenue by serving visitors to the area's national parks, forests and monuments.
 - As an example, Grand Staircase-Escalante National Monument is injecting substantial economic benefits into the community and has boosted growth in Kanab City and Kane County and families are moving to Kanab because they want to recreate in, build their business around the Monument's recreational resources, volunteer with, or work for the Bureau of Land Management as the managing agency for the Monument.
 - Many new residents are attracted to Kanab, and re-locate in Kanab because it is free of industrial air and water pollution.
 - Will introduce the visual blight of an undesirable and polluting industrial facility upon the landscape within Kanab City.
- 40-32 12. Presents an unacceptable financial burden on Kanab City taxpayers to train and upgrade Public Safety services including Fire Department, Ambulance Personnel, Haz-Mat compliance, and hospital services should there be an accidental explosion, fire or release of toxic gases at the plant.
- Carbon Monoxide (CO), a deadly but odorless gas is the main product of the gasification process which then is intended to be re-formed through chemical reactions into saleable products, but presents an unacceptable accidental exposure hazard for the residents of Kanab City because of the close proximity to densely populated neighborhoods downwind from the site.
- 40-33 13. Will exceed UDAQ small source exemption standards during normal operations after 60 days of operations within a one-year period (Operator states that several 90-day tests can be expected annually).
- 40-34 14. Will subject Kanab residents to unacceptable future financial liabilities.
- Developer not required to post bond with Kanab City to dismantle highly specialized facility when operations cease.
 - Will expose Kanab residents to industrial health hazards for which no special insurance coverage can be obtained for residents who cannot afford the premiums to obtain their own health insurance.
15. Will cause unacceptable negative cumulative effects on the local economy and quality of life in Kanab City and surrounding neighborhoods.

Responses

Comment 40-31

The subject of this comment has been addressed in the responses to comment numbers 21-03, 26-10, and 32-03. Additionally, as discussed in response to comment number 15-18, Figure 3-6 has been revised in the Final EA (now Figure 3-7) to show approximately how large the Pilot Plant would appear from the same vantage point in comparison to the visibility of nearby manmade features, including the Kanab Municipal Airport, the Kane County Public Safety Facility, and the Kane County Landfill. Also, the exhaust flare of the Pilot Plant would be operated intermittently for a total of 30 days over the course of the first year and intermittently for a total of 130 days in any subsequent year of operation. Because the Pilot Plant would gasify coal into a synthesis gas that would be combusted, the flare would be comparable to a natural gas flare and not to a "smokestack" associated with a coal combustion facility.

Comment 40-32

The subject of this comment has been addressed in the response to comment number 13-01.

Comment 40-33

Comment is consistent with Section 3.5.2.2 of the Draft EA. Notably, based on similar comments the analysis in the Final EA was expanded to include a review of air emissions during the 130 days of operation.

Comment 40-34

As described in Section 3.5.2 of the Draft EA, air emissions from the proposed Pilot Plant would not pose a public health risk based on the interpretation of Clean Air regulations, which require states to protect public health and safety through the permitting process. Because increases in emissions would be *de minimis* (of minimal importance) and would not contribute to a violation of any federal, state, or local air regulation, the UDEQ agreed that the Pilot Plant would be exempt from air permitting requirements. DOE's environmental review for the proposed Pilot Plant as documented in the EA identified no potential health hazards that would affect the need for special insurance.

Other subjects of this comment have been addressed in responses to comment numbers 06-13 and 28-09.

Commenter 40 – Rich Csenge (continued)

- 40-35
- a. Character of the city will be negatively impacted by the presence of a major polluter which will deter clean industry and manufacturing from locating in Kanab.
 - b. Air pollution will spoil quality of life in the greater Kanab area for many residents.
 - c. Extended stays in Kanab by visitors to the surrounding parks and public lands will diminish because of the presence of air pollution.
- 40-36
16. Provides almost no employment benefits while subjecting residents to unacceptable public health hazards, economic detriment and loss of quality of place as a primary community asset.
- a. Kanab is situated within one-half day's drive from eighteen national and state parks, national forests, and national monuments, which define its highest and best attributes as a destination for relocating to live and do business, and upon which a sustainable recreational and tourism economy is based.
- 40-37
17. The present value of substantial investments by business owners and residents in real property and business operations in the City of Kanab will be diminished as a result of the widely recognized desire to avoid recreating near or relocating to places where sources of toxic pollution are present.
18. Presents unacceptable hazards from fire, explosion, noxious gases, and toxic contamination of air and water to residents recreating at the nearby Kane-Plex Rodeo Arena and at Jackson Flat Reservoir.
- 40-38
19. Residents of Kanab City will be subjected to blowing dust hazards on prevailing Southwesterly winds from coal ash that will be stored at the site containing a wide range of toxic compounds, heavy metals and radioactive particles.

Responses**Comment 40-35**

The Draft EA addressed emissions from the proposed Pilot Plant in Section 3.5.2 (under Air Quality and Climate), which concluded that the plant would not contribute to a violation of any federal, state, or local air regulation. The Utah Division of Air Quality determined that the proposed Pilot Plant meets the requirements for a Small Source Exemption under Utah Administrative Code R307-401-9. Therefore, references to the Pilot Plant as a “major polluter” and other allegations in the comment are not substantiated. Other subjects of this comment have been addressed in responses to comment numbers 21-03 and 26-10.

Comment 40-36

The subject of this comment has been addressed in the responses to comment numbers 6-04, 21-03, 26-10, and 32-03.

Comment 40-37

The subjects of this comment have been addressed in the response to comment numbers 21-03, 36-06, 40-34, 40-35, 43-07 and 52-07.

Comment 40-38

No airborne releases of coal ash are expected. Section 3.5.2.1 of the Final EA was updated based on comment.

Commenter 41 – Virginia Pecora

From: GinnyP <ginnyp7753@earthlink.net>
To: <Joseph.Zambelli@NETL.DOE.GOV>
Date: 9/15/2011 7:13 PM
Subject: Comments On Draft EA For the Utah Coal and Biomass Fueled Pilot Plant

September 15, 2011

Dear Mr. Zambelli,

I have recently moved to Kanab, but I have written my comments to you prior to my relocation with regard to the Viresco Coal Gasification Facility that Jim Guthrie wants to build in Kanab.

41-01 I am very disappointed in your findings and I would like a more thorough EIS to be done because when reading the draft EA, I find that many potential hazards have not been fully researched.

41-02 I am deeply concerned about the possible hazardous waste which may find its way into our landfill. I am deeply concerned about the possibility of process waste water being put into our sewage system. I am not convinced that Viresco intends to build a "suitable" waste water containment pond. I am completely opposed to the possibility that Viresco may actually grind coal on site. I am surprized and skeptical about the assumption that the process water "will" be recycled.

41-03 In addition, Viresco is providing some of your information and Viresco will be allowed to monitor their own compliance with various regulations. That's the fox guarding the hen house, is it not?

41-04 There are a number of discrepancies as well. It is stated that the closest resident is 1.1 miles from the site, but the truth is that some residents in Fredonia, AZ, our closest neighbors, are only 1/2 mile away. In addition, the future residents of the prison being built nearby will also be within 1/2 mile.

41-05 It is stated that there are no reservoirs within close proximity, but what about the Jackson Flat Reservoir that will be only 1/4 mile away?

41-06 This EA seems rushed and incomplete with many assumptions being made. We are being told that accidents and toxic spills are not anticipated, but what have you based that assumption upon?

The DOE owes the residents of Kanab, Fredonia and the Palute Reservation a much more objective and thorough study. Either turn this grant down or do an EIS. Nothing short of that would be totally unfair.

Sincerely,
 Virginia Pecora
 PO Box 404
 300 E, 300 N L4
 Kanab, UT 84741
 443-655-5933

Responses**Comment 41-01**

The subject of this comment has been addressed in the response to comment number 12-01.

Comment 41-02

The subjects of this comment have been addressed in the responses to comment numbers 15-09 (waste disposal), 9-01 and 56-15 (process wastewater), 52-07 (retention basins), 15-03 (grinding coal), and 24-04 (use of "will").

Comment 41-03

The subject of this comment has been addressed in the response to comment numbers 6-15 and 15-04.

Comment 41-04

The subject of this comment has been addressed in the response to comment numbers 6-04 and 15-07.

Comment 41-05

As stated in response to comment number 15-16, because the Jackson Flat Water Supply Storage Project has not been completed, there is no impoundment; hence, this future water body has not been cataloged by the state. Potential cumulative impacts to this reservoir are discussed in Section 4.2.

Comment 41-06

The response to comment number 15-04 explains that the Pilot Plant would be subject to federal and state regulations applicable to all comparable industrial facilities. The Pilot Plant would be constructed in compliance with the Utah building codes and using industry-standard building practices. In addition, only small amounts of petroleum products would be stored at the Pilot Plant site for mechanical repairs, which would minimize the potential for spills. Viresco would develop and implement a SPCC plan, which would outline the procedures and training needed to respond to a spill, any accidental releases would be cleaned up to avoid groundwater contamination.

Commenter 42 – William F. Barnes**Joseph Zambelli - Comments-Draft EA Utah CoalGasificationPilot Plant**

From: Mariene <contact@dogonfunny.com>
To: <Joseph.Zambelli@NETL.DOE.GOV>
Date: 9/15/2011 4:58 PM
Subject: Comments-Draft EA Utah CoalGasificationPilot Plant
Attachments: DOEScopingStatement9-14-11.doc

Dear Mr. Zambelli,

I totally disagree with DOE's findings with regard to the Viresco Coal-Gasification facility.

42-01 I would like the DOE to refuse to grant the 2.4 million dollar earmark because this project is vehemently opposed by many Kanab citizens and with good reason. It has been forced on us by our local and most likely state governments.

I spent many hours preparing my original scoping comments and I feel that none of my concerns were ever fully explored by this Draft EA.

42-02 Throughout the Draft EA I found terms such as "not anticipated", "not expected", "not likely" when it came to assessing very real possibilities of air and water pollution and industrial accidents. This optimism is not purely analytical nor is it even objective.

42-03 I want a full EIS done if you still intend to release this grant to Viresco.

Please see attached.

Sincerely,
 William F. Barnes
 1094 S. Vermillion Drive
 Kanab, UT 84741
 443-631-5383

Responses**Comment 42-01**

Comment noted. DOE considered all scoping comments in the preparation of the EA. See also the response to comment number 12-01.

Comment 42-02

The CEQ NEPA regulations recognize the need to express impacts in qualitative terms when quantitative measurements are either not available or not meaningful for comparative analysis. DOE has added definitions for impacts to Section 3.0 of the Final EA described as beneficial, negligible, minor, moderate, and substantial.

Comment 42-03

The subject of this comment has been addressed in the response to comment number 12-01.

Commenter 43 – Beth Kampschror

Joseph Zambelli - comment on the Draft EA for the Utah Coal and Biomass Fueled Pilot Plant

From: "Beth Kampschror" <beth20@gmail.com>
To: <joseph.zambelli@neel.doe.gov>
Date: 9/16/2011 12:48 PM
Subject: comment on the Draft EA for the Utah Coal and Biomass Fueled Pilot Plant

Dear Mr. Zambelli:
 My comments on the Draft EA for Utah Coal and Biomass Fueled Pilot Plant (DOE/EA-1870) are below.

Sincerely,
 Beth Kampschror
 859 W Vance Dr
 Kanab, UT 84741
Beth20@gmail.com

43-01

Having reviewed the Draft EA for the Utah Coal and Biomass Fueled Pilot Plant slated to be built in Kanab, Utah, I would like to urge the Department of Energy (DoE) to take the further step of completing an EIS for this project, because 1) the project has sparked a massive amount of controversy in Kanab, and 2) the analysis in the Draft EA is lacking.

43-02

Hundreds of Kanab residents are concerned that the experimental Viresco plant will damage Kanab's tourism economy, without providing anything in return in the way of jobs or tax revenue. A poll of local business owners earlier this year revealed that around 80 percent of them are against the proposed plant for the same reasons. Just the specter of the plant's approval has already damaged some business: A local realtor told my husband earlier this year that he'd lost two potential buyers because they did not want to buy a house in a town with an experimental industrial plant. Kanab has been largely immune to the housing downturn, but local realtors don't like to lose out on sales in this economy, which is exactly what happened here. And the plant has not even been built yet. Meanwhile, this experimental plant, if it's built, will offer no tax revenue to Kanab. The employment it will offer will be limited to just a handful of jobs – and the Draft EA acknowledged that even those jobs may not be filled by local people.

The controversy has been unprecedented in Kanab: Local activists recently gathered nearly 700 signatures to obtain a ballot initiative on the issue, and a local citizens' group is taking Kanab's City Council to court over the Council's illegal decision to spot zone the 10 acres of the 150-acre state parcel that Viresco owner Jim Guthrie plants to lease from the state of Utah. Kanab's city officials have so far not responded to the massive public outcry over their initial zoning change for the plant. Nor have our city officials explained how the plant will benefit Kanab.

But aside from the local controversy and my interest in a full EIS on the project, I would also like to comment on the merits of the EA itself. For example:

43-03

1.0 PURPOSE AND NEED: The EA did not demonstrate the need to site this plant in Kanab. Please explain the need to site the plant in a small town in southern Utah that's close to national parks (Zion National Park, Bryce Canyon NP, Grand Canyon NP), a national recreation area (Glen Canyon National Recreation Area), and one of our country's largest national monuments (Grand Staircase-Escalante National Monument), and depends on tourism for its livelihood.

43-04

2.0 ALTERNATIVES: The EA did not analyze a different location for the plant, even though the language in the Congressional earmark specifies only the state of Utah. The DoE's rationale that the Proposed Action and No Action are a "reasonable range of alternatives" is not

Responses**Comment 43-01**

The subject of this comment has been addressed in the responses to comment numbers 12-01 and 40-20.

Comment 43-02

The subjects of this comment have been addressed in the responses to comment numbers 21-03 and 36-06. Because the project would be a private enterprise (not owned by DOE) on property leased by SITLA, it would be subject to tax assessments.

Comment 43-03

The subject of this comment has been addressed in the response to comment number 8-01.

Comment 43-04

The subject of this comment has been addressed in the response to comment number 8-01.

Commenter 43 – Beth Kampschror (continued)

- 43-04 (cont'd)** adequate, particularly when there are other locations in the state (ie, Salt Lake City outskirts) that already have industrial areas that could host such a plant.
- 43-05** 3.0 EXISTING CONDITIONS AND ENVIRONMENTAL CONSEQUENCES: I would ask the DoE to demonstrate that an analysis occurred here, because the EA makes evaluative statements without making a direct connection with any such analysis.
- 43-06** 3.10 SOCIO-ECONOMICS: DoE here showed that its Finding of No Significant Impact was arrived at due to preconceived notions, rather than an unbiased, fair and balanced evaluation of the effects an industrial facility would have on a small, rural tourist town. For example, on page 54, 4th paragraph, the statement "Process water from the Pilot Plant will be recycled... process wastewater will have no impact to the City of Kanab's wastewater system." Viresco owner Jim Guthrie has yet to reveal exactly how he plans to recycle the plant's water, and no one has yet demonstrated to Kanab's residents that Viresco wastewater will pose no harm to the city's wastewater system. This is just one example of such bias in this section of the Draft EA, which glossed over the concerns of local residents about how this plant will affect Kanab's tourism economy.
- 43-07** In addition, the EA glossed over some of my earlier concerns (from my scoping process comments in June 2011) concerning, for example, human health and safety. What are the risks associated with accidents at this plant, I asked in my earlier comments, and pointed out that Kanab's volunteer fire department and tiny hospital are not prepared to deal with an explosion or other toxic accident at the plant. I also pointed out that the nearest haz-mat teams are 1 ½ hours away. The Draft EA does not take these concerns into account, noting only that Viresco plans to contract a haz-mat company in advance of the construction (p. 57). The Draft EA also assures us that "major process operation failures have been considered in the engineering and design such that the system design is sufficiently flexible and conservative to help prevent such occurrences" (p. 58). That same confidence was likely shared by the engineers involved with the Deepwater Horizon oil rig and the Fukushima Daiichi nuclear plant. Accidents happen. Systems fail. And Kanab is too far away from competent help to even consider placing such a potentially dangerous facility here.
- 43-08** An EIS would take these concerns into account in a more substantive way. I therefore urge the DoE to conduct a full EIS on the Viresco project.
Thank you very much for taking these comments into account. I look forward to hearing from you as you make progress in your assessments.

Responses**Comment 43-05**

The subject of this comment has been addressed in the response to comment number 42-02.

Comment 43-06

The subject of this comment has been addressed in the response to comment numbers 9-01, 24-04, and 21-03.

Comment 43-07

The Pilot Plant would be designed with appropriate safety features, including rupture disks on pressurized vessels conforming to ASME standards and the delivery and storage of coal in bags to prevent ignition of coal dust. Pressure relief valves on the gasifier would be vented to the flare consistent with standard operating procedures for such units. DOE revised Section 3.9.2 in the Final EA to describe a potential catastrophic accident scenario during plant operations, which would result from an explosion simultaneously involving the 6,000-gallon propane storage tank and the 18,000-gallon hydrogen storage tank. The radius of impact from such an accident would extend to a limit of approximately 0.3 mile from the proposed site. There are no residences or permanent structures located within this radius; therefore, plant workers and individuals in vehicles on adjacent roadways would be the only population directly at risk.

With modern safety features and practices in place, the risk of a catastrophic accident at the proposed Pilot Plant is extremely low. The estimated accident rates for storage of liquid propane and liquid hydrogen were calculated based on industry statistics compiled by the EPA's Risk Management Program. A 6,000 gallon tank of liquid propane would have a probability of causing an accident 3 times in 100,000 years (3.0×10^{-5} accidents per year), and an 18,000 gallon tank of liquid hydrogen would have a probability of causing an accident 2.5 times in 1,000 years (2.5×10^{-3} accidents per year). See Section 3.9.2 for detail.

In the highly unlikely event of a catastrophic accident occurring at the Pilot Plant site, emergency response would be focused on rescue and medical attention for surviving workers, and control of the fire at the plant site and potential brush fires resulting from the explosion. Initial medical response for a maximum of 9 plant workers would be within the capacity of the Kane County Hospital with reliance on medivac helicopter transport to larger regional medical facilities if necessary. The Kanab Fire Department has the capacity to provide initial response for containment of potential brush fires resulting from the incident and would call for mutual aid from regional responders as needed.

Comment 43-08

The subject of this comment has been addressed in the response to comment number 12-01.

Commenter 44 – Don Fox

Joseph Zambelli - Comments on the Utah Coal and Biomass Fueled Pilot Project

From: "don fox" <dfdonfox@gmail.com>
 To: <Joseph.Zambelli@netl.doe.gov>
 Date: 9/16/2011 3:34 PM
 Subject: Comments on the Utah Coal and Biomass Fueled Pilot Project

Joseph Zambelli

My name is Don Fox and I am a resident of Kanab, Utah. My address is 1402 so. Stewart Drive. I am responding to the draft EA the was recently released.

44-01

I have a few concerns about the EA. Paragraph 3.1.2 states "future operations up to 130 annually for an undetermined period, impacts would be moderate. Operation effects would occur more often and for a longer period of time". What does this mean? What will the emissions be? It sounds like the testing and operation may be a lot more extensive than we were lead to believe. Where are the figures on the estimated emissions? Where is the analysis? Please substantiate these statements. What does moderate mean? Why an undetermined period?

44-02

I have another issue with the Socioeconomic section. Where is the analysis? How was it done? Where are the figures. Who was talked to. It appears the study was not done in a thorough, scientific manner. A local realty broker at Adobe Realty states that she has several houses listed by people who want to move because of the proposed plant. The same broker stated she has one sale pending the outcome of the proposed plant. It seems to me there is more damage done here than any possible benefits from 4 temporary jobs.

44-03

This proposed plant has become a huge controversy and has divided the towns citizens. I can say with some confidence that the majority of Kanaab's citizens and businesses do not want the plant built here. The best solution to this issue would be to complete and EIS on the proposed project and or look for an alternative site. People here are not against doing research on gasification, they just don't think it fits in a small, beautiful town that depends on tourism and retirees for it's existence. There is no need to locate the plant in Kanab. It shouldn't be that difficult to find a more remote site with power and water. Why were alternative sites not considered?

44-04

The last item I am concerned about is decommissioning. Does decommissioning include dismantling and cleanup. Kanab City cannot afford an expensive cleanup.
 Thank you very much for taking my comments.
 Don Fox

Responses**Comment 44-01**

The subject of this comment has been addressed in the response to comment number 12-01.

Comment 44-02

The subject of this comment has been addressed in the responses to comment numbers 21-03 and 36-06.

Comment 44-03

The subjects of this comment have been addressed in the responses to comment numbers 12-01 and 8-01.

Comment 44-04

The subject of this comment has been addressed in the responses to comment numbers 24-03 and 35-06.

Commenter 45 – Deborah Swanson

Joseph Zambelli - Response to DOE re: Kanab Coal Gasification Plant

From: "Deborah Swanson" <daswanson@sbcglobal.net>
To: <joseph.zambelli@netl.doe.gov>
Date: 9/16/2011 5:24 PM
Subject: Response to DOE re: Kanab Coal Gasification Plant
CC: "Deborah Swanson" <daswanson@sbcglobal.net>

September 16, 2011

Dear Mr. Zambelli:

Content:

I am writing because I am extremely concerned about the proposed Coal Gasification Plant by Viresco. I understand that the government needs to explore alternative and clean(er) energy projects and am not, in principle, against them. However, I am very much against the proposed location for this plant.

45-01

This is not a question of "not in my back yard"--it's insane because Kanab and its environs are *everyone's* back yard. In short, why would a plant of this kind be located in one of the most exquisite places in the world (testified to by the number of foreign tourists we get every year). Moreover, why in the world would such a plant (EVEN IF acceptable pollution-wise) be put in a place such as this? There are many other places where this plant might be located, and as you know, there has been incredible tension in this town ever since the residents learned about the plant AFTER a zoning permit was granted. Despite the arguments from our current council members--that we had an opportunity to participate in this decision--it was never made public that this zoning change would bring in an experimental coal plant.

Moreover, this plant has created an ongoing fight--essentially between the "old"(er) residents--many of whom view the riches of Utah as minerals coming out of the ground--and the "new"(er) a.k.a. "outsider" residents--who moved here thinking the land and it's riches should be saved for people not lucky enough to live here and for future generations. My husband and I retired here (and spend our money in this town) BECAUSE of the openness and beauty of the place, compared to the place we left--San Francisco. The fact that we would (as would many residents) see this ugly structure from our house (which we bought in large part because of its view) is what I would call serious aesthetic pollution, and a good reason for our housing prices to stay as low as they currently are regardless of any future recovery experienced in the southwest.

45-02

Request:

Thus, due to the amount of controversy generated, DOE should complete an EIS for this project. Doing so would not only address the many conclusions made in the current draft which are not supported by specific, scientific data, but also help provide information for potential, alternative sites should certain effects need to be clearly mitigated. In short, I'm asking the DOE both to do an EIS report, and, in the end to "think outside the box" of rules and ordinances and scientific data: would the DOE consider a plant proposed for Yellowstone? Yosemite? Disneyworld?

45-03

Thank you for considering this letter.

Deborah Swanson, Ph.D.
 982 S. Stewart Drive
 Kanab, Utah 84741
 (510) 295-7222

Responses**Comment 45-01**

The subject of this comment has been addressed in the response to comment number 8-01.

Comment 45-02

The Draft EA considered the aesthetic qualities of Kanab, and the qualitative effects of the proposed Pilot Plant on the local viewshed. As discussed in response to comment number 15-18, Figure 3-6 has been revised in the Final EA (now Figure 3-7) to show approximately how large the Pilot Plant would appear from the same vantage point in comparison to the visibility of nearby manmade features, including the Kanab Municipal Airport, the Kane County Public Safety Facility, and the Kane County Landfill. "Aesthetics" is not a resource that readily lends itself to quantitative impacts, particularly when considering visibility of structures by individuals. Some individuals would consider the visibility of these manmade features to be more of an impact on their aesthetic appreciation of the viewshed than others would. The responses to comment numbers 21-03 and 26-10 address comments relating to tourism and home values.

Comment 45-03

The subject of this comment has been addressed in the responses to comment numbers 12-01 and 8-01.

Commenter 46 – Cynthia Abbott

September 14, 2011

Mr. Joseph Zambelli
 U.S. Department of Energy
 National Energy Technology Laboratory
 3610 Collins Ferry Road
 M/S: B07
 P.O. Box 880
 Morgantown, WV 26507-0880

Dear Mr. Zambelli,

46-01

I submitted a scoping letter on the Kanab Coal gasification plant in June. In my letter I included my address to be informed of the draft environmental assessment when it was released. I received no notification when the draft EA was released in August. DOE NEPA regulation 1021.304 states public involvement is to be conducted in accordance with 40 CFR 1506.6. This requires federal agencies inform persons that are interested of the availability of environmental documents. Clearly, I showed my interest by submitting scoping comments. DOE has violated CEQ regulations by not notifying me of the draft EA.

46-02

The environmental effects disclosed in the draft environmental assessment are based on a flawed consideration of a connected action. DOE admits that Viresco's plans for operating its facility after DOE's assistance ends are not "well-defined" (EA pg 21). It states Viresco intends to operate its plant for a maximum of 130 days during a calendar year. What is this estimate of approximately 4 months based on? The EA does not include any rationale as to whether this "best guess" by Viresco is based on any credible information. It makes no sense that the government would contribute \$2,400,000 to build a plant that would then rely on operating it a third of the year. What if Viresco decides to operate longer than 130 days each year? There is no analysis of effects. The DOE appears anxious to provide significant funds for a research facility then wash its hands of its future operations. The analysis of the impacts must not be based on pure conjecture, and be within the rule of reason. This inaccurate, illogical inclusion of the future operation of the plant renders the environmental analysis fatally flawed. The impacts on air quality, groundwater and waste generated would be significantly different under a longer operating year. Consequently, a Finding of No Significant Impact would be based on a flawed analysis and would violate CEQ NEPA regulations.

I look forward to a newly prepared environmental assessment based on an accurate portrayal of the plant's future operation providing a thorough, science-based analysis of the environmental impacts of the proposed plant.

Yours truly,



Cynthia Abbott
 1386 East 1700 South
 Salt Lake City, UT 84105

Responses**Comment 46-01**

DOE received numerous comments during the public scoping period and took appropriate action to ensure that all interested parties were included in the distribution list. In this case, a mistake was made when entering the commenter's address into the distribution list (Kanab was entered instead of Salt Lake City). DOE regrets any inconvenience this mistake may have caused. DOE widely publicized the availability of the Draft EA to ensure that all interested parties would be informed.

Comment 46-02

The subject of this comment has been addressed in the responses to comment numbers 4-01 and 6-01.

Commenter 47 – Rene Berkoudt



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Grand Staircase-Escalante National Monument
190 E. Center Street
Kanab, UT 84741
<http://www.ut.blm.gov/monument>



In Reply Refer To:
1000-1795 (UT030)

September 16, 2011

Mr. Joseph Zambelli
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
M/S: B07
P.O. Box 880
Morgantown, WV 26507-0880

Dear Mr. Zambelli,
This letter transmits the Grand Staircase-Escalante National Monument's (GSENM) comments regarding the Department of Energy National Energy Technology Laboratory's Utah Coal and Biomass Fueled Pilot Plant Project Draft EA (EA-1870D). Please note the attached document containing our comments titled, "GSENM Comments on Utah Coal and Biomass Fueled Pilot Plant Project". Digital versions of all comments are available upon request.

Please contact Joe David, Grand Staircase-Escalante National Monument Planning and Environmental Coordinator, at (435) 899-0835 if you have any questions on this submittal.

Sincerely,

Rene C. Berkoudt
Grand Staircase-Escalante National Monument
Monument Manager

Attachment: BLM Comments on Utah Coal and Biomass Fueled Pilot Plant Project

cc:
BLM: Tyler Ashcroft
Planning and Environmental Coordinator
Utah State Office
Bureau of Land Management
440 West 200 South, Suite 500
Salt Lake City, Utah 84145-0155

OEPC: Robert F. Stewart
Regional Environmental Officer
Office of Environmental Policy and Compliance
U.S. Department of the Interior
P.O. Box 25007 (D-108)
Denver, CO 80225-0007

47-01

E-97

Responses

Comment 47-01

Comment noted.

Commenter 47 – Rene Berkoudt (continued)**Attachment: GSENM comments on Kanab Coal and Biomass Fueled Pilot Plant****September 16, 2011**

Staff of the Grand Staircase-Escalante National Monument (GSENM) reviewed the following sections of the EA for impacts and relation to GSENM lands: Purpose and Need, Proposed Action and Alternatives, Land Use, Aesthetics, Air Quality and Climate, Soils, Groundwater, Materials and Waste, and Cumulative Impacts. The following represents the GSENM's comments on the EA.

- 47-02** | 2.7.1 – Materials Required - The EA states that sand will be used in the process. They however do not state how sand will be disposed of or where the source of sand will be obtained from. Are these private or federal quarries, how far away and how much will be used?
- 47-03** | 3.5.1.1 National Ambient Air Quality Standards and Existing Air Quality (Air Quality and Climate Existing Conditions)
Class I Federal lands - The EA states that Class I Federal lands include areas such as national parks, national wilderness areas and national monuments. The BLM Grand Staircase-Escalante National Monument, Vermillion Cliffs National Monument and the various BLM wilderness areas are not listed, nor are the effects to these areas by the proposed action addressed. The statement should indicate these national monuments and wilderness areas are not Class 1 federal lands within the CAA.
- 47-04** | Table 3.7-1 The chart is missing Western Kane County Special Service District/Orderville Landfill.
- 47-05** | 4.1 Existing and Reasonably Foreseeable Projects (Cumulative Impacts)
What about the Proposed Lake Powell Pipeline Project?
- 47-06** | 4.3 Projects Not Considered for Cumulative Impacts (Cumulative Impacts)
Alton Coal Mine should be listed as a potential source of coal and in relation to the project, however negligible the effects of the proposed action may be on the operations of the mining operation.

Responses**Comment 47-02**

As shown in Table 3.7.2, up to 300 tons of sand for 30 days of operation and up to 1,300 tons of sand for 130 days of operation would be used. These amounts of sand are relatively small requirements and would be obtained from any one of numerous commercial providers in Utah or Arizona. The sand would be reused in the process and, therefore, would not require disposal on a regular basis. If any sand should require disposal it is expected to be nonhazardous and would be landfilled offsite at a facility permitted to accept nonhazardous waste. If, however, testing results indicate that the sand is hazardous, it would be disposed of at a facility permitted to accept hazardous waste as discussed in Section 3.7 of the EA.

Comment 47-03

The comment is consistent with Section 3.5.1.1 of the Draft EA. These areas are not Class I areas under the Clean Air Act. However, based on the analysis described in response to comment number 13-01, the proposed Pilot Plant is expected to have negligible impacts on the Grand Staircase-Escalante National Monument, Vermillion Cliffs National Monument, and other BLM wilderness areas.

Comment 47-04

The Western Kane County Special Service District/Long Valley Municipal Solid Waste Landfill has been added to Table 3.7-1 in the Final EA.

Comment 47-05

The following text has been added to Section 4.2 of the Final EA: "An alternative route for the Lake Powell Pipeline (the Existing Highway Alternative) would pass no closer than 2 miles to the east of the proposed Pilot Plant site and the projects are otherwise unrelated. The pipeline would result primarily in linear, land-based impacts that DOE believes would not be cumulative with the site-specific, land-based impacts of the proposed Pilot Plant except with respect to impacts on habitat as discussed in Section 4.2.12."

Comment 47-06

Comment noted. The Alton Mine has been added to the projects listed in Section 4.1.2 of the Final EA.



State of Utah

JARY R. HERBERT
Governor

GREG BELL
Lieutenant Governor

Commenter 48 – John Harja

Office of the Governor
PUBLIC LANDS POLICY COORDINATION

JOHN HARJA
Director

September 16, 2011

Joseph Zambelli
NEPA Document Manager
U.S. Department of Energy
National Energy Technology Laboratory
P.O. Box 880
3610 Collins Ferry Road
Morgantown, WV 26507-0880

Subject: Draft Environmental Assessment for the Utah Coal and Bio Mass Fueled Pilot Plant
Project; Kane County
RDCC Project No. 27983

Dear Mr. Zambelli:

The State of Utah, through the Public Lands Policy Coordination Office (PLPCO), has reviewed this project. Utah Code (Section 63J-4-601, et. seq.) designates PLPCO as the entity responsible to coordinate the review of technical and policy actions that may affect the physical resources of the state, and to facilitate the exchange of information on those actions among federal, state, and local government agencies. As part of this process, PLPCO makes use of the Resource Development Coordinating Committee (RDCC). The RDCC includes representatives from the state agencies that are generally involved or impacted by public lands management.

Division of Air Quality

48-01

Overall, the Utah Division of Air Quality (UDAQ) concurs with the evaluation that this Pilot Plant will be a minor source of air emissions under the proposed scenario. There are some questions and concerns with the draft, however.

48-02

The equipment and emissions are somewhat different than those listed on the Small Source Application submitted to the UDAQ in 2010 (Appendix D2), which raises some questions. There are some data issues and other minor points for discussion. None of these issues change our determination that the current Pilot Plant project, as funded with DOE assistance, meets the requirements for a Small Source Exemption under Utah Administrative Code (UAC) R307-401-9.

Responses

Comment 48-01

Comment noted.

Comment 48-02

Comment noted.

Commenter 48 – John Harja (continued)

Joseph Zambelli
September 16, 2011
- 2 -

- 48-03** 1. On page 16, section 2.7.2 and page 17, Figure 2.4 include an air compressor for the regenerator. This compressor is not addressed in the emission calculations. Please verify that this compressor is electrically-powered and not run on hydrogen or propane.
- 48-04** 2. On page 18, the description of the Fluidized Bed Regenerator does not address the regenerator vent stack emissions. It would also be helpful to know if the oxygen content supplied to the regenerator by the air compressor will be sufficient to fully combust the char to carbon dioxide (CO₂). An insufficient air supply will result in additional carbon monoxide (CO) emissions from the regenerator. In some cases, this partial combustion to CO is intentional, as the CO has some fuel value for use in other areas of a process.
- 48-05** 3. On page 22, Table 2.7-3, bottom entry on air emissions states that CO is the dominant pollutant. Under typical similar processes, and sufficient air supply to the regenerator, the dominant pollutant would be oxides of nitrogen (NO_x). There is not enough information in the draft EA to verify the statement on CO.
- 48-06** 4. On page 32, first full paragraph, multiple references are made to the stack. One indicates that emissions would be flared from the stack, inferring that this is actually the flare itself. There is no discussion of the regenerator stack. It would be helpful if the paragraph discussed the regenerator stack and the flare to avoid confusion, if there are indeed two emission points in the process structure. If the regenerator exhaust stream is routed to the flare with the syngas, that would be helpful to know also.
- 48-07** 5. On page 41, section 3.5.1.1, first paragraph, a reference is made to nitrous oxides (NO_x). Nitrous oxide is a different chemical species (N₂O). The correct reference would be oxides of nitrogen (NO_x).
- 48-08** 6. On page 42, it would be helpful if the sources (monitor IDs) of the measured ambient concentrations shown in Table 3.5-1 were cited.
- 48-09** 7. On page 44, Table 3.5-3, it would be very helpful to know how these compositions were determined or estimated. The method and data used to estimate the emissions in Table 3.5-4 should be included in Appendix D.
- 48-10** 8. On page 45, in the discussion of non-permitting requirements, it is more appropriate to cite the portions of the UAC R307 that implement the statutory limitations listed. The construction and operation of the proposed Pilot Plant would be subject to the requirements of R307-201-3 (Visible Emission Standards), R307-202 (Emission standards General Burning), and R307-205 (Emission Standards: Fugitive Emissions and Fugitive Dust). These contain more detailed requirements than the authorizing statutory language.
- 48-11** 9. In Appendix D1, there are several concerns:
- a. There is no data source or calculation methodology to verify the air emissions in

5110 State Office Building, PO Box 141107, Salt Lake City, Utah 84114-1107 telephone 801-537-9801 facsimile 801-537-9226

Responses**Comment 48-03**

The compressor would be electrically powered and would not combust hydrogen or propane.

Comment 48-04

The design includes (40 percent) excess air to the regenerator to promote full combustion of the char and supplemental propane fuel to carbon dioxide (CO₂).

Comment 48-05

The 3.5 tons per 30 days value for CO emissions for current operation period is corrected to 3.2 tons per 30 days. However, this value is not consistent with the mole fraction of CO in the flare exhaust in Table 3.5-3. The 3.2 tons per 30 days value was calculated using an engineering estimate of 1% of the carbon in coal fed to the gasifier plus supplemental propane fuel to the regenerator. Whereas, the 0.012 mole percentage of CO in the flare exhaust gas stream in Table 3.5-3 was calculated using an equilibrium reactor model for the flare (burning syngas with air), and is equal to 0.4 tons CO per 30 days.

Comment 48-06

The Draft EA uses flare, flare stack, and stack interchangeably. This is separate from the regenerator. Exhaust gases from the regenerator are not planned to be routed to the flare with the syngas. The following text has been added to Section 3.5: "Under the proposed action all three stationary sources of air emissions (i.e. the regenerator, boiler, and flare) were used to estimate emissions. Under the connected action all four stationary sources of air emissions (i.e., the regenerator, boiler, steam propane reformer, and flare) were used to estimate emissions. As stated in Table 2.8-3 a steam propane reformer would be installed at the proposed Pilot Plant under the connected action to produce hydrogen as opposed to continued use of hydrogen produced off site and transported by truck to the Pilot Plant."

Comment 48-07

Section 3.5.1.1 has been revised to use the reference oxides of nitrogen as opposed to nitrous oxide.

Comment 48-08

Table 3.5-1 has been revised to include the Washington and San Juan County monitoring IDs.

Comment 48-09

The method and data used to estimate the emissions in Table 3.5-4 has been added to Appendix D of the Final EA.

Commenter 48 – John Harja (continued)

Joseph Zambelli
September 16, 2011

- 3 -

**48-11
(cont'd)**

Table D-8 and Table D-9. The results do not appear to match similar calculations using EPA AP-42 emission factors, based on the propane emissions.

b. In Table D-8, a value is listed for NO emissions. Normally, these emissions are listed as NO_x due to the conversion of NO to NO₂ in the atmosphere. Table D-9 correctly lists NO_x emissions.

c. The Projected Operational Emissions (tpy) in Table D-9 are not consistent with the hourly emission rates for air emissions shown in Table D-8.

d. In comment #4 above, there is a question about the regenerator stack. In Table D-9, the Regenerator Exhaust shows a value for PM₁₀, while all other pollutants are shown under Flare Exhaust. If the regenerator vents into the flare stack, no separate emissions should be shown in the table for the Regenerator Exhaust. If the regenerator vents directly to the atmosphere, the listing of pollutants emitted from the Regenerator Exhaust is incomplete, as SO₂, CO and NO_x would also be expected from the regenerator.

If any of the above comments are unclear or require further detail, please contact Tim Andrus, Minor New Source Section Manager, at (801) 536-4429 or at tandrus@utah.gov.

The State of Utah appreciates the opportunity to review this proposal and we look forward to working with you on future projects. Please direct any other written questions regarding this correspondence to the Public Lands Policy Coordination Office at the address below, or call Judy Edwards at (801) 537-9023.

Sincerely,



John Harja
Director

Responses**Comment 48-10**

Section 3.5.2.2 has been updated as follows "The construction and operation of the proposed Pilot Plant would be subject to the requirements of R307-201-3 (Visible Emission Standards), R307-202 (Emission standards General Burning), and R307-205 (Emission Standards: Fugitive Emissions and Fugitive Dust).

Comment 48-11

Methodology section has been added to Appendix D of the Final EA for clarification. Small corrections have been made to operational emission calculations in Tables D-8 and D-9 in Appendix D of the Final EA.

Commenter 49 –Leslie Jacobs

Joseph Zambelli - My concerns about the Proposed Coal gasification plant being put in Kanab Utah.

From: "Leslie Jacobs." <lxg2@netzero.net>
To: <joseph.zambelli@netl.doe.gov>
Date: 9/18/2011 10:27 PM
Subject: My concerns about the Proposed Coal gasification plant being put in Kanab Utah.

Sept 18, 2011.

Leslie Jacobs
 P.O. Box 174
 Fredonia AZ, 86022.

To Whom It May Concern:

This letter is to inform you about the concerns I have over the proposal to build a coal gasification plant in Kanab Utah.

I live in Fredonia AZ, which is only a few miles south of Kanab and the negative impact this plant threatens to this entire area greatly alarms me. Following are my reasons:

- 49-01** | 1. The justification why this plant should be built in Kanab has not been shown.
- 49-02** | 1. If this plant is built, what happens if something goes wrong and pollutants are scattered over the countryside, even into the new recreational reservoir not far from this plants proposed location? It's nice to think nothing will go wrong but in reality it's absurd to say nothing can go wrong or that if something goes wrong, there will be no significant impact.
- 49-03** | 3. I understand the DOE is going to be involved with this project out to the 30 operation-day time period per year. I also understand the DOE knows the owner of this plant wants to operate this plant for 130 days total over its life time. At least that is what the owner has claimed. Therefore, the DOE needs to determine how many years it's going to take this plant to be in operation for both the 30 and 130 days operation to reach those time periods. Without that information, the EA is lacking in information required by NEPA to implement the CEQ regulations.

Thank you for your time and attention to these concerns I have.

Sincerely,

Leslie Jacobs.

Go to: www.kanab cres.org

Responses**Comment 49-01**

The subject of this comment has been addressed in the response to comment number 8-01.

Comment 49-02

As stated in response to comment number 15-04, Pilot Plant operations would be conducted in compliance with all applicable federal, state, and local laws, regulations, and ordinances as would be the case for all comparable commercial and industrial facilities. As stated in response to comment number 43-07, DOE revised Section 3.9.2 in the Final EA to describe a potential catastrophic accident scenario during plant operations and emergency response.

Comment 49-03

The subject of this comment has been addressed in the responses to comment numbers 4-01 and 6-01.

Commenter 50 – Robert Kaczowka

Robert Kaczowka
336 Los Barancos Lane
Kanab, UT 84741
bob@mesadesign.net

To: DOE
Re: Draft EA for Utah Coal and Biomass Fueled Pilot Plant (DOE/EA-1870D)
Date: 9/15/2011

Here are my concerns regarding the proposed project.
Quoted text is directly from DOE Draft EA, with my comments highlighted.
I am requesting an EA and an EIS for this project

50-01

"GHG emissions would be approximately 543 tons of CO2 for the 30 days of operation. (= 18 tons/day) This is equivalent to annual GHG emissions from 96 passenger vehicles, or the electricity use of 60 homes for one year (USEPA, 2011a)." -This is from a concentrated source, stack scrubbers need to be required.

Air emissions: Most notable emission would be of carbon monoxide and is *estimated* to be less than 4 tons for the 30 days of operation.. -Who will monitor?

"Most notable emission would be of carbon monoxide and is estimated to be less than 16 tons for 130 days of operation." Yet Per figure 2-4, Flare emits 9183 lbs/hr= 5 tons/hr!

Visibility:**50-02**

"...site for the Pilot Plant would represent an obstruction to natural views to the south from these recreational areas. As described in Section 3.1, the plans for recreational facilities in the area are conceptual and Kanab can account for the presence of the Pilot Plant when making final plans and designs."

As a designer I know the presence of the plant cannot be ignored or eliminated. That wording does nothing to address the 70' high smoke stack and its impact on the recreational area.

50-03

"A potential minor vapor plume emission may be visible from the surrounding area when operating under certain weather conditions. However, as the Pilot Plant would operate intermittently and over a relatively short duration (30 days of operation under the cooperative agreement with DOE), the occurrence of a visible vapor plume would be occasional and limited in duration. "
"These operations would be limited by the funding available and the conditions of permits and would probably not exceed 130 days of operation in any year, including a possible 90-day continuous test run."

So a vapor plume from one to three months... stack scrubbers need to be required.

"...gasification would occur in this vessel. During this process the carbonaceous feedstock is converted into high energy content syngas (primarily methane, hydrogen, carbon monoxide, and carbon dioxide)."

Thank You for addressing these issues in detail and requiring an Environmental Assessment and and Environmental Impact Statement by the Department of Environmental Protection.

Responses**Comment 50-01**

The subject of this comment has been addressed in the response to comment number 39-05. No controls for GHG emissions would be included.

Comment 50-02

The subject of this comment has been addressed in the responses to comment numbers 13-02, 24-05, and 24-06. Also, as described in response to comment number 40-31, the Pilot Plant would gasify coal into a synthesis gas that would be combusted. The flare would be comparable to a natural gas flare and not to a "smokestack" associated with a coal combustion facility.

Comment 50-03

Vapor emissions would consist of water vapor appearing as a white steam plume under various weather conditions.

Commenter 51 – John M. Barth (TPA)

LAW OFFICE OF
JOHN M. BARTH

P.O. BOX 409 HYGIENE, COLORADO 80533 (303) 774-8868 barthlawoffice@gmail.com

September 16, 2011

By email

Joseph Zambelli
NEPA Document Manager
DOE-NETL
3610 Collins Ferry Road
P.O. Box 880
Morgantown, WV 26507-0880
joseph.zambelli@netl.doe.gov

Darryl Shockley
Project Manager
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road, P.O. Box 880
Morgantown, WV 26507-0880
darryl.shockley@netl.doe.gov

Re: Comments on Draft Environmental Assessment for Utah Biomass and Coal Fueled Pilot Plant

Dear Mr. Zambelli:

On behalf of Taxpayer Association of Kane County (“TPA”), we submit these written comments on the Department of Energy (“DOE”) National Environmental Technology Laboratory’s (“NETL”) Draft Environmental Assessment (“draft EA”) for Utah Biomass and Coal Fueled Pilot Plant proposed by Viresco Energy LLC (“Viresco”). This letter is submitted on behalf of the TPA and its nearly 500 members. The TPA previously submitted written scoping comments to DOE on this project. The TPA’s scoping comments are incorporated herein by reference.

Viresco proposes to construct and operate a 5-ton/day hydro-gasification facility in the City of Kanab, Kane County, Utah. Viresco has publicly stated its intention to gasify a vast variety for feedstock, including coal, solid waste, biomass, sewage sludge, and pet coke. Components of the facility will reach 80’ in height. The facility will store all feedstocks on site, which include coal and biomass. The facility may discharge storm water and process water on-site into separate surface impoundments. A further description of the Viresco process can be found in Exhibit 1 attached hereto. A report

Responses

Comment 51-01

Comments noted. Responses to detailed comments are provided below.

Responses

Commenter 51 – John M. Barth (TPA) (continued)

51-01
(cont'd)

outlining the environmental impacts of coal gasification is attached hereto as Exhibit 2. The concerns outlined in Exhibit 2 must be addressed by the draft EA.

The draft EA states that the Fiscal Year 2010 Appropriations Act for Energy & Water Development and Related Agencies (Public Law 111-85) included a \$2,500,000 “earmark” sponsored by then Senator Bennett of Utah for a “Utah Coal and Biomass Fueled Pilot Plant.” Draft EA, p. 1. Public law 111-85 is attached hereto as Exhibit 3. Also attached hereto is the House Conference Report 111-278. Exhibit 4. A review of Public Law 111-85 and Conference Report 111-278 reveal that neither the law nor the report specified that the appropriation was “earmarked” to Viresco Energy LLC nor did the legislation require that the project be located in Kanab, Utah. Instead, the legislation allows the funds to be used for any company at any location in Utah.

NEPA review is required because DOE is proposing to provide at least \$2.5 million in funding for the design, construction, and/or operation of the Viresco facility. The draft EA states that DOE will provide 80% of the funding to build the Viresco plant. Viresco is seeking a 30-year lease with the Utah State Institutional Trust Lands Administration (“SITLA”) for operation of the plant.

Legal Background

DOE’s proposed action is subject to the National Environmental Policy Act (“NEPA”), 42 U.S.C. 4321 *et seq.*, and the regulations at 40 C.F.R. Parts 1500-1508 and 10 C.F.R. Part 1021. Draft EA, p. 1.

NEPA requires that adverse environmental impacts be analyzed and disclosed “before decisions are made and before actions are taken.” 40 C.F.R. §1500.1. The information in an EA/EIS “must be of high quality.” *Id.* NEPA is an action-forcing statute designed to ensure that agencies take a “hard look” at the environmental impacts of any federal action. See Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1211 (9th Cir. 1998). NEPA’s analysis and disclosure goals are two-fold:

It ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts; it also guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision.

Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 349 (1989). See also Idaho Sporting Congress v. Thomas, 137 F.3d 1146, 1151 (9th Cir. 1998). By focusing the agency’s attention on the environmental consequences of its proposed action, NEPA “ensures that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast.” Robertson, 490 U.S. at 349.

Commenter 51 – John M. Barth (TPA) (continued)

The DOE is required under NEPA to prepare an environmental impact statement (“EIS”) for any “major federal action significantly affecting the quality of the human environment.” 42 U.S.C. § 4332(2)(C). The agency must consider direct, indirect, and cumulative environmental impacts of the proposed action. 40 C.F.R. § 1502.16; 40 C.F.R. § 1508.8; 40 C.F.R. § 1508.25(c). Direct effects are caused by the action and occur at the same time and place as the proposed project. *Id.* § 1508.8(a). Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. *Id.* § 1508.8(b). Both types of impacts include “effects on natural resources and on the components, structures, and functioning of affected ecosystems,” as well as “aesthetic, historic, cultural, economic, social or health [effects].” *Id.* Cumulative effects are defined as the impacts resulting from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions. 40 C.F.R. § 1508.7. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. *Id.*

Analysis of site-specific impacts under NEPA must “contain a reasonably thorough discussion of the significant aspects of the probable environmental consequences.” *California v. Block*, 690 F.2d 753, 761 (9th Cir. 1982). NEPA mandates a “hard look at a decision’s environmental consequences.” *Id.* The hard look doctrine bars “[g]eneral statements about ‘possible effects’ and ‘some risk’ . . . absent a justification regarding why more definitive information could not be provided.” *Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1380 (9th Cir. 1998).

“A threshold question in a NEPA case is whether a proposed project will ‘significantly affect’ the environment, thereby triggering the requirement for an EIS [Environmental Impact Statement].” *Blue Mountains Biodiversity Project*, 161 F.3d at 1212 (citing 42 U.S.C. § 4332(2)(C)). “As a preliminary step, an agency may prepare an EA [Environmental Assessment] to decide whether the environmental impact of a proposed action is significant enough to warrant preparation of an EIS.” *Id.* (citing 40 CFR § 1508.9). “The purpose of an EA is to provide the agency with sufficient evidence and analysis for determining whether to prepare an EIS or to issue a [Finding of No Significant Impact].” *Metcalf v. Daley*, 214 F.3d 1135, 1143 (9th Cir. 2000) (citing 40 CFR § 1508.9). “Because the very important decision whether to prepare an EIS is based solely on the EA, the EA is fundamental to the decision-making process.” *Id.*; see also 40 CFR § 1500.1(b); *Idaho Sporting Congress*, 137 F.3d at 1151. “[T]he public must be given an opportunity to comment on draft EAs and EISs.” *Anderson v. Evans*, 314 F.3d 1006, 1016 (9th Cir. 2002); *Citizens for Better Forestry v. U.S. Dept. of Agriculture*, 341 F.3d 961, 970 (9th Cir. 2003).

In this case, DOE has prepared an EA. In determining whether an action requires an EIS, EA or is categorically excluded, federal agencies must broadly review the impacts of the action. Agencies must not only review the direct impacts of the action, but also analyze indirect and cumulative impacts. 40 C.F.R. §§ 1508.7, 1508.8, 1508.25(a)(2). In addition, NEPA regulations require agencies to consider the impacts of “connected actions.” *Id.* § 1508.25(a)(1).

Responses

Commenter 51 – John M. Barth (TPA) (continued)

Cumulative impacts include impacts of "other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." 40 C.F.R. § 1508.7. A cumulative impact analysis must provide a "useful analysis" that includes a detailed and quantified evaluation of cumulative impacts to allow for informed decision-making and public disclosure. Kern v. U.S. Bureau of Land Management, 284 F.3d 1062, 1066 (9th Cir. 2002); Ocean Advocates v. U.S. Army Corps of Engineers, 361 F.3d 1108 1118 (9th Cir. 2004) (holding "[t]he Corps' findings about cumulative impacts [in an EA] were perfunctory and conclusory and do not provide a helpful analysis of past, present, and future projects"). The NEPA requirement to analyze cumulative impacts prevents agencies from undertaking a piecemeal review of environmental impacts. Earth Island Institute, 351 F.3d at 1306-7. The NEPA obligation to consider cumulative impacts extends to all "present" and "reasonably foreseeable" future projects, including when a project is part of larger program or an identifiable series of projects. Blue Mountains, 161 F.3d at 1214-15 (requiring Forest Service to consider cumulative impacts of all logging projects set forth in regional strategy in NEPA document for first project); Kern, 284 F.3d at 1076; Hall v. Norton, 266 F.3d 969, 978 (9th Cir. 2001) (finding cumulative analysis on land exchange for one development failed to consider impacts from other developments potentially subject to land exchanges).

To decide whether actions have "significant" impacts, agencies consider their "intensity" and "context." 40 C.F.R. § 1508.27. "Context" refers to the geographic and temporal scope of the agency action and interests affected. Id. at § 1508.27(a). "Intensity" addresses the severity of the environmental impacts and includes consideration of "other actions with individually insignificant but cumulatively significant effects," controversial actions, actions with unknown risks, actions that may establish a precedent for future actions and the proximity to park lands or "ecologically critical areas." Id. at § 1508.27(b).

A party seeking to show that an agency should have prepared an EIS instead of a FONSI "need not demonstrate that significant effects *will* occur," but rather must show only that "there are *substantial questions* whether the project may have a significant effect on the environment." Anderson [v. Evans], 350 F.3d 815, 831 (9th Cir. 2003). Western Land Exchange Project, 315 F.Supp.2d at 1087 (emphasis in original). "If several actions taken together have a cumulatively significant effect, this must be analyzed in an EIS. Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1214 (9th Cir. 1998)." Western Land Exchange Project, 315 F.Supp.2d at 1094. *See also* Te-Moak Tribe of Western Shoshone v. Department of the Interior, 608 F.3d 592, 602 (9th Cir. 2010) ("NEPA requires that where several actions have a cumulative ... environmental effect, this consequence must be considered in an EIS.").

Clearly, the Viresco project is a "major federal action" because of DOE's financial support of a project that may significantly affect the quality of the human environment. 42 U.S.C. §4332(C). As such, DOE must examine: "(i) the environmental impact of the proposed action, (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented, (iii) alternatives to the proposed action, (iv) the relationship between local short term uses of man's environment and the maintenance

Responses

Comment 51-02

As stated in response to comment number 12-01, DOE prepared this EA to determine whether an environmental impact statement (EIS) is required (see 40 CFR § 1501.4). Because of the degree of public interest in this project, DOE also held a public scoping meeting, one public hearing, and a tribal community meeting to encourage and facilitate public participation and comment that would assist DOE in determining whether an EIS would be required.

Based on the EA and the public comment, DOE has determined that its proposed action and this project, as evaluated in the EA, would not have a "significant environmental impact", as this phrase is used for purposes of determining whether to prepare an EIS.

DOE's proposed action and Viresco's proposed project are not closely similar to ones which normally require an EIS, and the nature of the project is similar to ones for which agencies usually prepare an EA. Therefore, DOE is not required under 40 CFR 1501.4(e)(2) to make a FONSI available for public review in advance of a final decision.

Responses

Commenter 51 – John M. Barth (TPA) (continued)

51-02
(cont'd)

and enhancement of long-term productivity, and (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.” *Id.*

As will be discussed further below, here the DOE failed to take the required “hard look” at all direct, indirect, and cumulative impacts, failed to review all reasonable alternatives, failed to prepare the required EIS, failed to ascertain the baseline conditions for the Project, and improperly deferred analysis of critical Project aspects until the future.

Controversy surrounding the project

The proposed Viresco project will be located in a residential/agricultural area of the City of Kanab. Kanab is a small town whose economy is largely dependent on tourism from the many national parks in southern Utah.

The parcel upon which Viresco intends to build the facility is undeveloped, relatively pristine land. Until recently, the parcel upon which the Viresco plant would be located was zoned agricultural/residential. In late 2010, the City of Kanab re-zoned the parcel upon which property would be located to an industrial/manufacturing zoning. The City never provided notice to the public that the re-zoning was for a coal gasification plant. Taxpayer Association of Kane County has filed suit in Kane County District Court challenging the re-zoning of this parcel illegal. The lawsuit remains pending.

The City has also approved a site plan and conditional use permit for the facility. The Taxpayer Association has appealed both of these approvals.

An informal poll of Kanab businesses was conducted in 2011 revealing that 80% of the business owners in Kanab opposed the Viresco project. The local newspaper has published numerous articles, editorials, and Op-Ed’s revealing the extensive opposition to the project.

The citizens of Kanab have also submitted a voter initiative to the City. The citizen initiative would require a majority vote of the citizens of Kanab in order to approve the issuance of a conditional use permit for a project such as the Viresco project. The initiative was filed before the City approved the conditional use permit for the Viresco project. The initiative is also retroactive and is applicable to the Viresco project. Therefore, in the event a majority of the citizens of Kanab disapprove of this project at the ballot box, this project will not be allowed to proceed in Kanab.

The draft EA also conforms the controversy surrounding this project by stating:

“Based on early local interest in the project, the public involvement effort for the Utah Coal and Biomass Fueled Pilot Plant EA was more extensive than usually undertaken for an EA. DOE received comments about the proposed Pilot Plant from 99 members of the public before the EA was initiated. Additionally, the

Commenter 51 – John M. Barth (TPA) (continued)

Environmental Program Manager for the Kaibab Band of Paiute Indians contacted the DOE NEPA Document Manager in January 2011, before the EA was initiated, stating that the tribe was concerned about the project and requested to be consulted on DOE's action. In February 2011, the tribal representative explained that the Kaibab Band's level of concern resulted from the discovery of Native American remains during construction at the Jackson Flat Water Supply Storage Project, which is located approximately 0.25 mile north of the proposed Pilot Plant site. As a result of the enhanced local interest, DOE chose to initiate a public scoping process comparable to one normally conducted for an EIS."

Draft EA at Section 1.4.

51-03

The public controversy surrounding the Project precludes the use of an EA/FONSI or categorical exclusion and supports a finding that it may cause significant impacts. See 40 C.F.R. § 1508.27(b)(4). Agencies must prepare environmental impact statements whenever a federal action is "controversial," that is, when there is "a substantial dispute [about] the size, nature, or effect of the major Federal action." Blue Mountains, 161 F.3d at 1212. When multiple parties are highly critical an agency's decision and disputes an agency's unsubstantiated conclusion of no impacts at all, this is "precisely the type of 'controversial' action for which an EIS must be prepared." Sierra Club v. U.S. Forest Serv., 843 F.2d 1190, 1193 (9th Cir. 1988); Jones v. Gordon, 792 F.2d 821 (9th Cir. 1986) (rejecting use of categorical exclusion when public controversy existed).

In summary, due to the extensive controversy and opposition to this project and for the reasons stated in this comment letter, the DOE has a legal duty to conduct an EIS for this project.

The appropriation was not "earmarked" for Viresco or Kanab

51-04

The draft EA incorrectly states that the proposed appropriation of \$2.5 million was "earmarked" for Viresco's coal plant in Kanab. See, draft EA, Section 2.2. This is factually incorrect. As noted above, a review of Public Law 111-85 and Conference Report 111-278 reveals that neither the law nor the conference report specified that the money was "earmarked" to Viresco Energy LLC nor did the legislation indicate that the project must be located in Kanab, Utah. Instead, the legislation allows the funds to be used for any company at any location in Utah. This is important because the draft EA claims that it did not consider any alternatives to the proposed project because the money was allegedly earmarked for Viresco and its preferred location in Kanab.

Moreover, it does not appear that the \$2.5 million was ever subject to public or competitive bidding. Since the legislation did not specify which company was to receive the appropriation, the DOE should have issued a public request for proposals or used some other process to obtain competitive bids for the appropriation. We request that DOE fully disclose the following information before issuing a final NEPA determination for this project:

Responses

Comment 51-03

Public controversy alone is not the sole determining factor in whether an EIS is the appropriate level of environmental review for a proposed action.

Comment 51-04

DOE disagrees with the interpretation that the "legislation allows the funds to be used for any company at any location in Utah." As stated in response to comment number 8-01, DOE initiated a financial assistance award for Viresco's Pilot Plant project in response to a Fiscal Year 2010 Congressional earmark by Senator Bennett for a "Coal and Biomass to Fuel Pilot Plant." In accordance with the earmark, DOE and Viresco Energy, LLC signed a cooperative agreement (DE-FE0002945) that would provide \$2,404,000 using appropriations under the line item for Fossil Energy Research and Development as found in Public Law 111-85 and the referenced Energy and Water Conference Report 111- 278.

DOE did not select this project under either a competitive or a non-competitive procurement and had no role in enacting this earmark. As the agency administering the financial assistance at the direction of Congress, DOE must comply with NEPA by assessing and considering the potential environmental impacts associated with the proposed project. DOE has no regulatory jurisdiction regarding the project. However, DOE may consider additional mitigation imposed as a condition of its final NEPA decision.

Commenter 51 – John M. Barth (TPA) (continued)

51-04
(cont'd)

- 1) What procedures were used by DOE to select Viresco as the company to receive this appropriation; and,
- 2) Was the appropriation subject to an open public bidding process? If not, why not?
- 3) Were any other proposals received for this appropriation? If not, why not?

DOE has previously required an EIS for fluidized bed demonstration projects

The Viresco project proposes to use a fluidized bed gasifier and fluidized bed combustor. Draft EA at p. 10. The DOE has previously required the preparation of an EIS for a fluidized bed boiler at the Western Greenbrier Co-Production Demonstration Project. Exhibit 5 hereto (Federal Register Notice dated April 29, 2008).

Given the its practice of requiring an EIS for fluid bed demonstration projects, DOE has a legal duty to prepare an EIS for the Viresco project which will use a similar technology.

The draft EA fails to disclose the required facts and information

The draft EA repeatedly states that it cannot perform a full analysis of environmental impacts of the over the life of the project because Viresco has not disclosed the information to conduct the analysis. Draft EA at p. 1 and p. 21. This includes potential future “gas cleanup processing and hydrogen separation.” *Id.* at p. 21. Since there is no information on future operations, the potential impacts were not analyzed. *Id.* For example, Viresco has failed to disclose in writing the number of days per year it will operate after the initial 30-day test period, the number of hours of operation per year, whether it intends to expand production at the site, and how many years it intends to operate. DOE has a duty to obtain the information its needs to assess the direct, indirect, and cumulative impact of the Viresco project. DOE also has a duty to assess the environmental impacts of “connected actions” such as future operations beyond the 30-day test period. DOE has failed to obtain the information it needs to properly assess all environmental impacts from the project. DOE has also failed to provide a credible justification for its failure to obtain the necessary information. Accordingly, DOE’s EA is incomplete and may not be used as a basis for a final NEPA determination.

The draft EA contains factually incorrect information

The Draft EA also contains factually incorrect information. For example, the draft EA assumes the facility will not exceed 67 feet in height. However, in an email dated March 24, 2011 from the Mayor to City Manager Duane Huffman it says that the stack will be 80’ high. Exhibit 6 hereto. The correct stack height should be identified in the NEPA process. The impact of this stack should be evaluated on neighborhood views and the nearby airport.

51-07

Responses

Comment 51-05

The subject of this comment has been addressed in the responses to comment numbers 12-01 and 51-02. The Western Greenbrier Co-Production Project EIS evaluated the potential impacts of a proposed 98-megawatt, coal-fired, baseload power plant, which is the type of project for which DOE normally prepares an EIS.

Comment 51-06

The subject of this comment has been addressed in the responses to comment numbers 4-01 and 6-01. DOE’s proposed action is to provide financial assistance to Viresco. DOE examined potential environmental impacts for Viresco’s planned 30-day testing period of operation covered in the cooperative agreement. Because Viresco has expressed an interest in conducting additional testing of the process, DOE also evaluated the potential environmental impacts of an additional 130-day operational testing period. There are no specific plans for operation of the proposed Pilot Plant beyond the 130-day testing period. As stated in Section 2.8, Consideration of Connected Actions, of the Draft EA, “Viresco’s plans for operating its facility after DOE’s involvement ends are not well-defined and would depend on the objectives the provider of any additional funding sought to achieve. However, it is likely that any future operations would continue to test the gasification process in order to improve its operation and output to achieve high process efficiency.” The analysis of potential environmental impacts for the currently proposed additional operational period of 130 days is covered as a connected action in the Final EA under Section 2.8 and under each environmental resource in Chapter 3. If Viresco were to seek federal funding for additional upgrades or expansions to the Pilot Plant, a future NEPA review by the agency that was considering providing additional funds would be undertaken at that time. Any further operation would depend on the objectives that agency sought to achieve, which is unknown at this time.

Comment 51-07

The wording on page 1 of the conditional use permit authorizes a 60-foot tall gasifier with a 67-foot tall exhaust structure “plus the additional height of required and approved flare enclosures”. The Final EA has been revised to clarify these dimensions. The maximum height of the exhaust flare structure, including the enclosure structure, would be approximately 72 feet. Additionally, Figure 3-6 has been revised in the Final EA (now Figure 3-7) to show approximately how large the Pilot Plant would appear from the same vantage point in comparison to the visibility of nearby manmade features, including the Kanab Municipal Airport, the Kane County Public Safety Facility, and the Kane County Landfill. The exhaust flare structure would be required to meet Federal Aviation Administration regulations applicable to aircraft navigation and safety, including appropriate lighting beacons.

Commenter 51 – John M. Barth (TPA) (continued)The draft EA makes many unsupported assumptions

The Draft EA makes a number of unsupported assumptions. For example, the Draft EA states,

51-08

1) The draft EA assumes that the new 3 phase 12.5 kV transmission line needed for the Viresco will follow existing rights-of-way and easements and therefore the environmental impacts will be negligible. Draft EA at p. 54. There is no written support for this statement. The proposed location for the 2.5 kV transmission line must be identified and the environmental impacts of the line examined.

51-09

2) The draft EA also assumes that Viresco will not operate beyond 130 days/year. Draft EA at p. 21. This stands in contrast to public statements by Viresco during the land use approval process that it wanted the ability to operate 365 days/year. The days/hours of operation are important because there is a direct relationship with air emissions, waste generation, and resources consumed by the facility. DOE must obtain an enforceable plan of operation from Viresco before completing its NEPA analysis. Without an enforceable plan of operations, DOE must assume continuous operation of the plant for 30 years.

The draft EA only evaluates 30 days of operation instead of 30 years

DOE is proposing to provide 80% of the funds needed to construct the Viresco plant. The public funds will be used to buy the gasifier, construct the building, and purchase all other equipment. The draft EA correctly states that Viresco has negotiated a lease with SITLA, the owners of the land. Draft EA, Section 2.2. The draft EA also correctly states that the term of the lease is 30 years. Draft EA, Section 2.7.5.

51-10

DOE's draft EA is fatally flawed because it only evaluates adverse environmental impacts associated with 30 days of operation of the plant. The draft EA also inaccurately presumes that the number of days of operation per year will never exceed 130 days. The Draft EA claims that it cannot evaluate further operational impacts beyond 30 days because Viresco has not disclosed the details of its future operations.

Given that it is reasonably foreseeable that Viresco will operate the plant for 30 years, DOE has the duty to examine the full environmental impacts of 30 years of operation, not 30 days of operation. If Viresco will not provide an enforceable plan of operations, DOE should conduct its impact analysis assuming the plant will operate 24 hours a day, 365 days a year for 30 years. DOE's failure to evaluate the worst-case scenario for operations at the Viresco plant renders the EA fatally flawed.

51-11

The purpose and need for this facility is not adequately addressed**Responses****Comment 51-08**

As described in response to comment number 36-04, the text in Section 3.8.2 of the Final EA has been revised based on further clarification by Garkane Energy of the "improvements" indicated in its will-serve letter of August 8, 2011 (EA Appendix C). The necessary improvements would consist of the installation of connection wiring between an existing power transmission line on Old Landfill Road adjacent to the proposed Pilot Plant site and the site proper. This connection wiring would cross Old Landfill Road and not require any new easements or rights-of-way to be acquired or disturbed.

Comment 51-09

The subject of this comment has been addressed in the response to comment number 51-06.

Comment 51-10

The subject of this comment has been addressed in the response to comment number 51-06. As stated in the Draft EA, "Viresco's plans for operating its facility after DOE's involvement ends are not well-defined and would depend on the objectives the provider of any additional funding sought to achieve. However, it is likely that any future operations would continue to test the gasification process in order to improve its operation and output to achieve high process efficiency. Viresco has informed DOE that it intends to operate its Pilot Plant for a maximum of 130 days during a calendar year if it is able to obtain financing." Given the demonstration nature of the proposed facility and the uncertainty regarding the source and availability of continued funding, DOE does not consider operation of the plant for 24 hours a day, 365 days a year for 30 years to be reasonably foreseeable. Evaluation of a "worst-case scenario" as suggested by this comment is not required under NEPA.

Comment 51-11

The subject of this comment has been addressed in the response to comment number 51-04. NEPA requires that the purpose and need for agency action be established, DOE's purpose and need for the proposed action was stated in Section 1.2 of the Draft EA and is consistent with this response. The objective of the proposed project, which is not identical to the purpose and need for agency action, is to demonstrate the proposed gasification process at a size that would provide economic performance data adaptable to a commercial-scale facility. Although basic experimentation for the process was already completed in a laboratory (bench scale) model, it is not directly scalable to a commercially economic size.

Commenter 51 – John M. Barth (TPA) (continued)

51-11
(cont'd)

Each NEPA document must establish the purpose and need for the proposal. 40 C.F.R. §1502.13. The EA must establish that there is a “need” for synthetic liquid fuel produced from the solid feedstocks proposed by Viresco. The EA must also assess the economics of the proposal. For example, the cost of producing one gallon of synthetic liquid fuel from the Viresco process must be determined. Then, an economic analysis should be performed to determine the price of conventional fuels (ex. gasoline) at which Viresco’s product would be competitive in the market. The draft EA fails to adequately support the purpose and need for the Viresco facility.

The draft EA also fails to provide support for the purpose and need for the facility at the proposed location.

Failure to consider alternatives

NEPA requires the agency to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources.” 42 U.S.C. § 4332(E); 40 CFR § 1508.9(b). It must “rigorously explore and objectively evaluate all reasonable alternatives” to the proposed action. City of Tenakee Springs v. Clough, 915 F.2d 1308, 1310 (9th Cir. 1990). Indeed, NEPA’s implementing regulations recognize that the consideration of alternatives is “the heart of the environmental impact statement.” 40 CFR 1502.14, quoted in Alaska Wilderness Recreation and Tourism Ass’n v. Morrison, 67 F.3d 723, 729 (9th Cir. 1995).

The draft EA incorrectly claims that the DOE may only analyze the proposed alternative and the no action alternatives because Congress has “earmarked” that the appropriation go to specifically to Viresco for its proposed site in Kanab. As noted above, Congress did not earmark the appropriation to Viresco or require that the plant be located in Kanab. The draft EA also states, “DOE’s decision subject to NEPA is limited to either accepting or rejecting the project as proposed by the proponent and specified by Congress, including its proposed technology and selected site.” Draft EA section 2.3. This statement is contradicted by Congress’ legislation and the conference report. Accordingly, DOE had a duty to consider other less environmentally harmful alternatives.

For example, the proposed action would be located in a relatively pristine agricultural/residential area. See, cover page of draft EA. Thus, there will be extensive new ground disturbance associated with the project. Moreover, given its rural location, all materials, including coal, natural gas, and all other components of the facility will have to be delivered by truck. The facility proposes to burn 5 tons of coal per day.

The draft EA should have considered alternative locations with less environmental impacts. For example, the draft EA should have considered locating the facility in an industrial area with existing compatible uses. The draft EA should have also considered locations with access to a railroad to minimize transportation impacts (traffic, truck emissions, truck noise, etc.). The draft EA fails to consider any other

Responses

Comment 51-12

As stated in response to comment number 8-01, DOE did not select this project under either a competitive or a non-competitive procurement and had no role in enacting this earmark. As the agency administering the financial assistance at the direction of Congress, DOE must comply with NEPA by assessing the potential environmental impacts associated with the proposed project and by considering the potential impacts. DOE has no regulatory jurisdiction regarding the project. However, DOE may consider additional mitigation as a condition of its final NEPA decision.

NEPA requires that agencies evaluate all reasonable alternatives to its proposed action. The purpose and need for agency action determines the range of reasonable alternatives. In this case, the purpose and need for DOE’s proposed action is to comply with the Congressional earmark. The earmark calls for DOE to grant financial assistance for the project as proposed. Given that Congress chose to distribute funding for this particular project, the range of reasonable alternatives for DOE’s consideration is the project as proposed by Viresco, any alternatives still under consideration by Viresco or that are reasonable within the confines of the project as proposed, and a no action alternative.

Viresco had already selected the technology for the project before the earmark was enacted. Viresco has not identified alternative sites, technologies or utilities other than those addressed in the EA. Alternatives still under consideration by Viresco or reasonably within the confines of the project as proposed have been evaluated in the EA, along with the no action alternative.

E-112

51-12

Commenter 51 – John M. Barth (TPA) (continued)51-12
(cont'd)

location in Utah, despite Congress broad appropriation allowing the site to be located anywhere in the state.

It appears that the City of Kanab was selected as the site of the facility for the convenience of Jim Guthrie, owner of Viresco. Jim Guthrie owns several residential and ranch properties in Kane County. Exhibit 7 hereto. Mr. Guthrie also is seeking approval from the City of Kanab for a subdivision. Exhibit 8 hereto. Thus, it appears that Mr. Guthrie has chosen the Kanab location based on his personal convenience, not based on the site being the least environmentally damaging alternative, as required under NEPA. The DOE perpetuation of Kanab as the location of the facility is arbitrary and capricious.

Illegal segmentation

The draft EA states, “[u]nder the cooperative agreement Viresco would operate the Pilot Plant and collect data for a series of test runs totaling 30 days of operation over a period of months; after DOE’s financial assistance ends, Viresco plans to seek additional funding for continued operations.” Draft EA cover sheet. Thus, Viresco and NETL have segmented this project into at least two parts: 1) a 30-day period of test runs covered by NETL’s current proposal to fund this project in excess of \$2.4 million; and 2) continued operations for which U.S. government funding has not been identified.

51-13

DOE and Viresco have illegally segmented this project. The draft EA discloses that Viresco intends to seek additional government funds for continued operation of the plant. Thus, the draft EA must examine the full operations for the life of the plant. By illegally segmenting this project, DOE’s EA prevents a full and complete environmental assessment of all impacts of the project over its lifetime. The draft EA fails to make a legally binding commitment to conduct additional NEPA analysis for “continued operations”. Presumably, these “continued operations” may involve full-scale operation of the plant. The impacts from “further operations” should not be segmented and instead should be evaluated in an EIS. At a minimum, the draft EA should have identified what these “continued operations” will entail and examine their environmental impacts. Failure to do so renders this draft EA legally flawed due to illegal segmentation.

Lack of required tribal consultation

The documents in Appendix A-2 reveal that there has been legally inadequate consultation with the Kaibab Band of Paiute Indians. The Kaibab Band of Paiute Indians has requested government-to-government consultation. The Kaibab Band of Paiute Indians documented their significant concerns with this project in an email dated June 13, 2011, which is incorporated herein by reference. For the reasons stated therein, DOE has failed to undertake adequate tribal consultation. In addition, for the reasons stated in the tribe’s June 13, 2011 email, DOE should abandon this project due to the significant tribal, cultural, and environmental concerns raised by the Kaibab Band of Paiute Indians.

51-14

51-15

Failure to examine cumulative impacts to tribal cultural resources**Responses****Comment 51-13**

The subject of this comment has been addressed in the responses to comment numbers 15-15 and 51-06. Future operation of the Pilot Plant would be contingent on Viresco’s acquisition of additional funding from either a private or public source. As stated in the Draft EA, “Viresco’s plans for operating its facility after DOE’s involvement ends are not well-defined and would depend on the objectives the provider of any additional funding sought to achieve. However, it is likely that any future operations would continue to test the gasification process in order to improve its operation and output to achieve high process efficiency.” Also as stated in the Draft EA, “Viresco has no plans to commercialize the proposed Pilot Plant at the Kanab site in the future; it would remain a research and development facility.”

Comment 51-14

The subject of this comment has been addressed in the response to comment number 24-07. DOE’s consultation with Native American tribes in the region is documented in Appendix A2. Sections 1.4 and 3.4.2 of the EA discuss consultation with Native American tribes and what actions and precautions would be taken in the event that cultural resources, artifacts, human remains, or burial sites are discovered during construction of the Pilot Plant. DOE intends to continue consultation with the Kaibab Band to develop a plan for treatment of sites considered traditional cultural properties by the Kaibab.

Comment 51-15

As stated in response to comment number 24-07, DOE believes that the Draft EA adequately considered the potential for cumulative impacts from the discovery of Native American remains in the project vicinity. In Section 3.4.1, the Draft EA acknowledged that the proposed Pilot Plant site is within 0.25 mile of the Jackson Flat Water Supply Storage Project where Native American remains were inadvertently discovered during construction. The Draft EA in Section 3.4.2 also noted that no Native American remains were encountered during construction of the Kane County Public Safety Facility, which is approximately 0.5 mile from the proposed Pilot Plant site and situated along the same topographic feature in similar proximity to the Jackson Flat Project.

Other subjects of this comment have been addressed in the response to comment number 24-07.

Commenter 51 – John M. Barth (TPA) (continued)51-15
(cont'd)

The draft EA admits that tribal cultural resources were discovered during the recent excavation of the neighboring Jackson Flat reservoir. Draft EA at p. 40 The Tribe has also identified a strong connection between Jackson Flat reservoir and the proposed Viresco site. It is reasonably foreseeable that similar burial resources will be discovered at the Viresco site. The draft EA fails to conduct an adequate cumulative impacts analysis on the potential adverse impacts to such tribal cultural resources.

Failure to quantify cumulative impacts

The DOE has a duty to quantify all impacts of the project. Despite this requirement, the draft EA repeatedly draws un-analytical, qualitative conclusions, including, but not limited to:

51-16

“Construction and operation of the proposed project in combination with the Kane County Public Safety Facility could adversely impact uses of recreational areas associated with the Jackson Flat Water Supply Storage Project.” Draft EA Section 4.2.1;

“Construction and operation of the proposed project in combination with the Kane County Public Safety Facility could adversely impact views from the recreational areas associated with the Jackson Flat Water Supply Storage Project and, to a lesser extent, residences to the northwest of the Pilot Plant site.” Draft EA Section 4.2.2;

“If any human remains are discovered, then such a discovery could be viewed as a cumulative impact of the projects.” Draft EA Section 4.2.4.

These, and other, un-analytical, qualitative conclusions do not comply with the requirements of NEPA and its implementing regulations. The DOE must quantify all impacts in an EIS.

Three-phase 12.5 kV power line never disclosed/analyzed

51-17

In Appendix 3 to the Draft EA, it states that a 3-phase 12.5 kV power line will have to be constructed and run to the proposed plant in order to provide electrical services. This transmission line has never been disclosed prior to the release of Appendix 3. All environmental, social, and cultural impacts of this transmission line must be analyzed in the EA. The draft EA fails to identify the location of the transmission line or the environmental impacts of the proposed line.

Permit and impacts for surface impoundment not disclosed

51-18

Viresco has disclosed that it may construct a surface impoundment to store process water from the plant. Draft EA at p. 48. Table 2.5-2 in the draft EA fails to disclose the State of Utah permitting requirements associated with this impoundment. Table 2.5-2 also fails to disclose City land use permitting requirements for the facility.

Proposed Alton coal mine, connected actions, and cumulative impacts**Responses****Comment 51-16**

DOE conducted the analysis of cumulative impacts consistent with NEPA regulations and guidance. The NEPA regulations recognize that impacts, including cumulative impacts, may not be quantifiable in all cases and that impacts shall be discussed in proportion to their significance.

Comment 51-17

As stated in response to comment number 36-04, the text in Section 3.8.2 of the Final EA has been revised based on further clarification by Garkane Energy of the “improvements” indicated in its will-serve letter of August 8, 2011 (EA Appendix C). The necessary improvements would consist of the installation of connection wiring between an existing power transmission line on Old Landfill Road adjacent to the proposed Pilot Plant site (see Figure 3-13 in the Final EA) and the site proper. This connection wiring would cross Old Landfill Road and not require any new easements or rights-of-way to be acquired or disturbed.

Comment 51-18

Section 2.5, including Table 2.5-2, of the EA addresses the proposed Pilot Plant as subject to the cooperative agreement between DOE and Viresco (DOE’s proposed action to provide funding). The additional features potentially associated with the future operations by Viresco are addressed as connected actions in Section 2.8. At this time, it is unknown whether Viresco would require an evaporation pond under the connected action (see response to comment 56-15). A groundwater discharge permit may be required by the state for the protection of groundwater quality from the evaporation pond (per Utah Administrative Code R317-6). Viresco would coordinate with the state on obtaining all required permits for any additional features that may be implemented under the connected action. Regarding land use permits, the City of Kanab has already approved a conditional use permit as described in Section 3.1.1 of the EA and is, therefore, not included in Table 2.5-2.

Commenter 51 – John M. Barth (TPA) (continued)

51-19 Viresco has publicly stated that it intends to use 5 tons/day of coal from the proposed Alton coal mine in Alton, Utah. Viresco initially considered locating its facility in Alton because of the need for Alton coal. Thus, the Viresco project and Alton mine are “connected actions” under NEPA because Viresco is dependent on the Alton mine as a source of coal and the Alton mine is dependent on Viresco as a customer. The Alton coal mine is currently undergoing an environmental impacts statement under NEPA by the BLM. Thus, the cumulative impacts to air quality, water quality and quantity, climate change, transportation, and other impacts caused by the proposed Alton coal mine and Viresco project must be analyzed collectively.

51-20 One important cumulative impact that must be assessed is the climate change impact of the Alton mine and Viresco project. The Alton mine will contribute to climate change because the mining of coal releases climate change pollution, such as methane and other gases trapped in coal. In addition, coal mining involves use of heavy equipment that burns various fuels thereby releasing climate change pollution. Moreover, the Alton mine will sell coal for combustion to various large industrial facilities, such coal-fired power plants and cement plants. The climate change pollution emitted from these facilities, and the Viresco facility, must be calculated along with its impact on climate change.

Air quality

The draft EA must analyze the direct, indirect and cumulative human health and environmental impacts caused by all air pollutant emissions from the Viresco project and the related Alton coal mine, including, but not limited to:

- 51-21**
- a) Emission of criteria and hazardous air pollutants for the life of the facility-- including SO₂, CO, NO_x, ozone, particulate matter (both PM₁₀ and PM_{2.5}), mercury, sulfuric acid, and CO₂ and other greenhouse gases.
 - b) A consideration of emissions from existing and reasonably anticipated proposed air emission sources on National Ambient Air Quality Standards and increment compliance for SO₂, NO_x, ozone, CO₂, and particulate matter.
 - c) Visibility degradation in Class I and Class II areas must also be analyzed.
 - d) Mercury deposition in local and regional waters must be analyzed and the corresponding, uptake by livestock, humans, and wildlife.
 - e) A soils and vegetation analysis in a 25 mile radius of the Viresco project should be analyzed.
 - f) Regional health impacts due to existing and additional pollution, such as asthma, cancer, stroke, and premature death. This analysis must include a complete respiratory health analysis of the communities surrounding existing and proposed coal plants.

51-22 In addition to assessing the air pollution from the Viresco plant, the EA must also calculate the air pollution emitted as a result of the combustion of each feedstock to be utilized by the Viresco project.

Responses

Comment 51-19

As stated in response to comment number 21-06, CEQ’s NEPA regulations, 40 *CFR* § 1508.25(a)(1), define “connected actions” as actions that are “closely related and therefore should be discussed in the same impact statement.” Section 1508 further identifies three factors for determining connected actions. 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; [or] (iii) Are interdependent parts of a larger action and depend on the larger action for their justification.” Applying this definition, DOE does not believe that the operation of the Alton Mine, identified in the EA as a source of coal for the proposed Pilot Plant, constitutes a connected action since the mine is not a sole source operation and the amount of coal purchased for use in the proposed Pilot Plant (650 tons) would be an insignificant portion of the total annual sales from this coal mine.

Comment 51-20

The Draft EA addressed the cumulative impacts of the proposed Pilot Plant on GHG and climate change in Section 4.2.6. The incremental addition of the proposed Pilot Plant to GHG emissions is stated in this section as 543 tons (493 metric tons) of direct CO₂-equivalent emissions during the demonstration period. The Final EA has been updated to state that the direct CO₂-equivalent GHG emissions would be approximately 2,588 tons (2,353 metric tons) based on 130 days of operation. According to CEQ’s draft NEPA guidance on “Consideration of the Effects of Climate Change and Greenhouse Gas Emissions,” if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of CO₂-equivalent GHG emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decisionmakers and the public. Emissions from the proposed Pilot Plant would be far below this threshold. Even if the proposed Pilot Plant could operate 365 days per year, the maximum potential emission of 6,600 metric tons of CO₂-equivalent GHG per year would be only about 26% of the threshold. On this basis, DOE does not believe additional analysis for GHG emissions is warranted.

In response to comment number 51-19, DOE stated that the amount of coal purchased for use in the proposed Pilot Plant (650 tons) would be an insignificant portion of the total annual sales from the Alton Mine. Therefore, DOE believes that the proposed Pilot Plant’s use of coal from the Alton Mine would represent a trivial incremental impact on GHG emissions and climate change in comparison to the total emissions related to Alton Mine coal distribution, which is not within the scope of this EA to address cumulatively.

Commenter 51 – John M. Barth (TPA) (continued)

Responses (continued)

Comment 51-21

The subject of this comment has been addressed in the response to comment numbers 13-01 and 47-03.

Comment 51-22

The response to comment number 13-01 addresses the impacts of Pilot Plant emissions on air quality based on a feedstock of coal. The use of mixtures of coal and woody waste in the feedstock would not affect the analysis appreciably.

Commenter 51 – John M. Barth (TPA) (continued)

- 51-23** The DOE also inappropriately limited its air impact analysis to 30-days of emissions, rather than full-scale operation or even a 130-day annual operating period. Draft EA at 41-45. The DOE needs to address the significant increase in pollution from full operation the project.
- 51-24** Surface water and groundwater impacts
The City's sewage lagoons must be protected from heavy metals and other water pollution discharges from the Viresco plant. First, an analysis should be performed to determine whether Viresco's wastewater discharges can be treated by the City's wastewater treatment plant. If the City's treatment plant is unable to treat the wastewater from Viresco's plant, NEPA approval must be denied. Viresco plans to discharge approximately 3,000 gallons/day of wastewater. The wastewater must be characterized as part of the NEPA process. Moreover, the groundwater below any proposed surface impoundments must be sampled for a period of at least six months prior to any waste disposal to characterize current baseline conditions.
- 51-25** Section 2.7.2 (Facility Process and Equipment) makes no reference to use of an evaporation pond for on-site wastewater disposal. However, in Section 5.2 of the draft EA it states, "[w]ater resources used by the Pilot Plant would be treated and recycled in the process for reuse under the DOE cooperative agreement for 30 days of operation or possibly returned to the environment through an evaporation pond under future operations." The draft EA fails to explain what the term "returned to the environment" means. What pollutants will also be "returned to the environment"? What is the risk of groundwater contamination from the pond(s). How will the pond(s) be designed? The draft EA fails to adequately examine the environmental impacts from such pond(s).
- 51-26** Pressure/Explosion
This plant will operate at very high pressures. Risk of explosion and associated impacts were not adequately analyzed in the draft EA.
- 51-27** Identification of alleged economic benefits of the project
To date, Viresco has failed to disclose the alleged economic benefits to the City of Kanab, Kane County, the State of Utah, or the United States. A full and complete economic benefit analysis must be completed and disclosed as part of the NEPA process for the project.
- Unanswered scoping questions
As noted above, the Taxpayer Association of Kane County submitted scoping comments to the DOE for this project. The draft EA fails to examine many of the questions raised during the scoping process. The unanswered questions include, but are not limited to:

Responses

Comment 51-23

In response to comments on the Draft EA, the analysis in Section 3.5.2.1 of the Final EA was expanded to include a review of air emissions during the 130 days of operation.

Comment 51-24

As stated in response to comment number 9-01, Section 3.8.2 explains that "Total daily process wastewater discharge under the connected action would total approximately 930 gpd. Similar to the 30-day scenario, it is anticipated that some or all of this effluent could be recycled depending on the water composition. Viresco is considering one of the following options to manage the process wastewater: 1) construct an evaporation pond to collect part or all of the process wastewater for recycling; 2) transport, treat, and dispose of the process wastewater offsite, similar to that described under the proposed action; or 3) discharge to the City of Kanab's sanitary sewer system. The total daily rate would represent less than one percent of the two lagoons currently utilized by the City of Kanab. Additionally, prior to storage in the evaporation pond or discharge into the public sewer system, Viresco would ensure that the process wastewater would be treated to standards as specified by the state (UDEQ, Division of Water Quality) and federal regulations. Therefore, it is expected that the process wastewater potentially generated by the Pilot Plant would have a long-term minor impact on capacity and performance of the Kanab wastewater system. Kanab's wastewater lagoons would have the capacity to meet this demand without the need for upgrades. The use of Kanab's wastewater system would be based on specifications and a defined sampling plan agreed upon between Viresco and the City of Kanab."

The potential future discharge of process wastewater to the Kanab system is, therefore, only one of the options available to Viresco, and Viresco's decision among options would be based in part on the future characterization of the wastewater generated. In the event that Viresco were to propose discharging its process wastewater to the Kanab system, the wastewater would be subject to industrial pretreatment regulations under the NPDES permitting program. An appropriate sampling plan agreed upon between Viresco and the City of Kanab would ensure that the wastewater being sent to the City's lagoons would not alter or damage the existing system. See also responses to comment number 56-15, which discusses water demand and Viresco's plans to manage the process wastewater and comment number 52-07, which discusses potential impacts to groundwater.

Comment 51-25

Section 2.7.2 and Figure 2-4 cover Viresco's operational plans as implemented under the proposed action (30-day); the evaporation pond discussed in Section 5.2 refers to one of Viresco's options in handling

Commenter 51 – John M. Barth (TPA) (continued)**Responses (continued)**

the process wastewater under the connected action (130-day maximum). As stated in response to comment number 39-04, the statement "returned to the environment" means that the process wastewater would be evaporated in the evaporation pond. The water would thus be returned to the environment in the form of water vapor, leaving the solids to be disposed of appropriately as nonhazardous or hazardous waste depending on characterization. See also responses to comment number 56-15, which discusses water demand and Viresco's plans to manage the process wastewater, and comment number 52-07, which discusses potential impacts to groundwater.

Comment 51-26

The subject of this comment has been addressed in the response to comment number 43-07.

Comment 51-27

DOE's decisionmaking with respect to the proposed action relates to the funding of a demonstration project. As explained in response to comment number 8-02, the Pilot Plant would demonstrate the steam hydrogasification process at a size that would provide economic performance data adaptable to a commercial-scale facility. The CEQ NEPA regulations do not require an economic benefit analysis, nor do the DOE NEPA regulations. The Draft EA estimated that the proposed Pilot Plant would have a minor beneficial impact on employment and the economy of the region. Economic input-output studies consistently demonstrate that spending for commercial and public works projects results in multiplier effects from indirect and induced employment. Based on the estimated cost of the project (approximately \$3 million), DOE determined that the performance of an input-output study would not affect the decisionmaking process for the EA.

Commenter 51 – John M. Barth (TPA) (continued)

- 51-28 1. Exactly what feedstocks will be gasified as the Viresco plant?
- Viresco has stated in proceedings before the City of Kanab that a variety of feedstocks will be gasified at the plant, including coal, solid waste, biomass, sewage sludge, and/or pet coke. In order to determine the composition of the air, water, and solid waste pollution generated from the Viresco plant, the EA must specifically list each feedstock that will be gasified, the chemical composition of each feedstock, and the specific source of each feedstock. Viresco must also disclose the total tonnage of each feedstock to be gasified, the dates of the gasification of each feedstock, and the time period over which each feedstock will be gasified.
- 51-29 2. What does the energy balance of its Viresco's process reveal?
- Viresco proposes to produce liquid fuel from its various feedstocks. However, in order to fully assess the purpose, need, and efficiency of the Viresco process, DOE must conduct a full and complete energy balance assessments of Viresco's process. In other words, DOE must fully analyze the amount of energy needed to produce 1 gallon of liquid fuel product and balance this against the amount of energy that can be generated from that gallon of liquid fuel. The net energy balance should then be disclosed in the EA/EIS.
- 51-30 3. Where will the process water from the Viresco project be disposed?
- Viresco has yet to fully disclose where the voluminous process water generated at the plant will be disposed of? Will it be disposed of in on-site ponds? Will it be sent to the City of Kanab sewage treatment plant? If so, will the process water be pre-treated before being discharged to the City wastewater treatment plant? If it is pre-treated, what pretreatment standards apply to the process water? What pre-treatment system will be utilized to reduce the pollutants? What will the pre-treatment effluent limitations be?
- All of these questions must be answered in the draft EA to ensure that the Viresco project does not result in significant adverse environmental impacts and that any impacts are fully mitigated.
- An EIS should be prepared**
- 51-31 As noted above, if a proposed action, considered along with cumulative and other impacts, "may" have a significant impact, an EIS must be prepared. A "plaintiff need not show that significant effects will in fact occur." Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1212 (9th Cir. 1998). Rather, it is enough that "substantial questions whether a project may have a significant effect" on the environment. Id. "If the cumulative impact of a given project and other planned projects is significant, [the agency] cannot simply prepare an EA for its project, issue a FONSI, and ignore the overall impact of the project." Kern v. BLM, 284 F.3d 1062, 1076 (9th Cir. 2002). An EIS "must be prepared if substantial questions are raised as to whether a project may

Responses

Comment 51-28

The subject of this comment has been addressed in the response to comment number 6-09. The quantity of feedstock required and the chemical composition of the feedstock is not known at this time; however, as stated in response to comment number 6-09, the feedstock would primarily consist of woody waste.

Comment 51-29

In Section 2.2, proposed action, the Draft EA explains that the proposed Pilot Plant would convert coal and biomass into a synthesis gas suitable for further processing to a liquid fuel or substitute natural gas. But, because the Pilot Plant would be a demonstration project at a scalable size to provide economic data that would be used to assess the commercial feasibility of the steam hydrogasification process, the synthesis gas would be combusted properly in a flare system. No fuel products or electricity would be produced by the proposed project. The section further states that the proposed Pilot Plant would remain a research and development facility; Viresco has no plans to commercialize the Pilot Plant at the Kanab site. A "net energy balance" analysis would be one of the objectives that the demonstration project is intended to provide as a basis for assessing the economic feasibility of the process.

Comment 51-30

The subject of this comment has been addressed in the responses to comment numbers 51-24, 51-25, and 56-15.

Comment 51-31

The subject of this comment has been addressed in the responses to comment numbers 12-01 and 51-02.

Commenter 51 – John M. Barth (TPA) (continued)

**51-31
(cont'd)**

cause significant degradation of some human environmental factor.” Klamath Siskiyou Wildlands Center v. Boody, 468 F.3d 549, 562 (9th Cir. 2006) (quoting Idaho Sporting Congress v. Thomas, 137 F.3d 1146, 1150 (9th Cir.1998)). The court noted that in Idaho Sporting, “[w]e explained that “[t]he plaintiff need not show that significant effects will in fact occur, but if the plaintiff raises substantial questions whether a project MAY have a significant effect, an EIS must be prepared.” *Id.* at 1150 (emphasis in original). This is a low standard.” *See also Te-Moak Tribe of Western Shoshone v. Department of the Interior*, 608 F.3d 592, 602 (9th Cir. 2010) (“NEPA requires that where several actions have a cumulative ... environmental effect, this consequence must be considered in an EIS.”).

For the reasons discussed herein, the DOE improperly failed to prepare an EIS. Without the required review of potential direct, indirect, and cumulative impacts, the decision not to prepare an EIS is without sufficient evidentiary support.

Conclusion

For the reasons stated above, the draft EA does not support a finding of no significant environmental impact from the Viresco coal project. Therefore, DOE must prepare an EIS for this project.

In the event the DOE refuses to prepare an EIS for this project, we request that the DOE submit a draft FONSI for review and comment by the public pursuant to 10 C.F.R. 1021.322(d).

Finally, we incorporate herein by reference any other comments on the draft EA submitted by the Kaibab Band of Paiute Indians or any other party opposing the project.

Sincerely,

s/John Barth

Attorney for Taxpayer Association of Kane County

cc: Sky Chaney, President, Taxpayer Association of Kane County

Attachments

- Exhibit 1 description of Viresco process
- Exhibit 2 Blowing smoke report
- Exhibit 3 2010 Appropriations Act
- Exhibit 4 conference report 111-287
- Exhibit 5 Western Greenbrier ROD notice
- Exhibit 6 Stack height email
- Exhibit 7 Guthrie property ownership records
- Exhibit 8 Guthrie subdivision email

51-33

Responses

Comment 51-32

The subject of this comment has been addressed in the responses to comment numbers 12-01 and 51-02.

Comment 51-33

The attachments provided by the commenter have been entered into the administrative record for this EA.

Commenter 52 – Sky Chaney

Joseph Zambelli - *TPA of Kane County Comments on the Draft EA for the Utah Coal and Biomass Fueled Pilot Project Proposed for Kanab, Utah

From: "Sky Chaney" <skychaney@kanab.net>
To: "Joseph Zambelli" <Joseph.Zambelli@NETL.DOE.GOV>
Date: 9/16/2011 4:22 PM
Subject: *TPA of Kane County Comments on the Draft EA for the Utah Coal and Biomass Fueled Pilot Project Proposed for Kanab, Utah
CC: <skychaney@kanab.net>, "John Barth" <barthlawoffice@gmail.com>

September 16, 2011

From: Dr. Sky Chaney, President ~ Taxpayer Association of Kane County

To: Joseph Zambelli, DOE NEPA Document Manager joseph.zambelli@netl.doe.gov

RE: Comments on the Draft EA for the Utah Coal and Biomass Fueled Pilot Project Proposed for Kanab, Utah

*Please confirm your receipt of these comments.

Dear Mr. Zambelli:

I am the President of the Taxpayer Association of Kane County. We have a membership of about 500 people and represent the financial interests of taxpayers in our county.

I have read the Draft Environmental Assessment for the Utah Coal and Biomass Fueled Pilot Project Proposed for Kanab, Utah and am submitting the following comments. John Barth, an attorney representing our organization will also be submitting comments on the Draft EA on behalf of the Taxpayer Association of Kane County.

In May I had submitted scoping comments for this project. My impression after reading the Draft EA is that my concerns were either not sufficiently examined or were totally omitted from examination in the document. The NEPA process requires a thorough examination of issues presented in the scoping process and this did not take place; therefore the NEPA process for this project so far, is flawed.

52-01

Most of the people who live in the community of Kanab do not want this coal gas plant to be built. Many people, including the Kaibab Paiute Tribe, have submitted their concerns to the DOE during this process and their concerns have not been fully addressed.

A survey completed by our Taxpayer Association in April of this year determined that 9 out of 10 businesses in Kanab are concerned about the impact of this proposed coal gas plant and do not want it to be built in our community. Clearly the Draft EA did not adequately research or address the economic impacts of the proposed project.

For the above mentioned reasons, I request that the DOE extend the comment period for

Responses

Comment 52-01

The response to comment number 20-01 addresses the request to extend the comment period. Other subjects of this comment have been addressed in the response to comment number 12-01.

Commenter 52 – Sky Chaney (continued)

52-01 (cont'd)	<p><u>another 4 weeks.</u></p> <p>I also request that the NEPA process be expanded to include <u>a full EIS</u>, especially since so many people are opposed to the construction of this plant in our small tourist town.</p> <p><u>The following is a list of the issues that I submitted during the scoping process that were either not fully examined or were omitted from the Draft EA:</u></p>
52-02	<p>1. Our area economy is based on tourism and also on retirees who will move here because of the clean air and natural beauty of our landscape. What impact will the coal gas plant have on these two important sources of economic strength? Will the visual impacts, smell, or other physical impacts of the plant harm our economy?</p>
52-03	<p>2. Both Kanab City and Kane County have been struggling to keep financially afloat and pay the expenses of local government. Many property owners have had their property taxes more than double in the last 5 years. What outcomes related to this proposed coal gas plant will have the negative impact on the city and county budgets and property taxes?</p>
52-04	<p>3. What are the risks that this proposed plant will not operate as stated by Viresco Energy, resulting in negative environmental and financial impacts? How can these risks be mitigated?</p>
52-05	<p>4. What are the risks that the project will fail to be cleaned up when it terminates? How can the Kanab and Kane County be covered financially in case a clean up or removal of the industrial plant facility becomes necessary?</p>
52-06	<p>5. Jim Guthrie, the President of Viresco Energy Inc filed for bankruptcy in California in 2009. What will happen if Viresco Energy goes bankrupt or terminates the project prematurely? What expenses may be incurred by Kanab and Kane County, and how can this be mitigated?</p>
52-07	<p>6. Coal gasification expert, Richard Boardman, has recommended that the proposed plant have a double-lined retention pond to prevent toxic byproducts from leaking into the ground? Is this part of the Viresco Energy design? What are the risks of toxic leaks and how can these be mitigated?</p>
52-08	<p>7. Coal gasification expert, Richard Boardman, has recommended that the proposed plant be fitted with scrubbers to reduce air pollution. Is this part of the Viresco Energy design? What are the risks of air pollution and how can these be mitigated?</p>
52-09	<p>8. During the life of the proposed plant, what additional expenses may be incurred by Kanab or Kane County... including infrastructure costs, service costs, or any other costs? How can the risk of increased expenses for local government be mitigated?</p>
52-10	<p>9. Jim Guthrie has stated that Viresco Energy may process feedstocks other than coal during the life of the project. What other feedstocks will be processed? What pollution or toxic risks exist for these feedstocks? How can the environmental and financial risks associated with processing these feedstocks be mitigated?</p>
52-11	<p>10. Can the project, during its operating life, increase the level of air pollution or toxic waste products? What impacts will this have on Kanab and Kane County? How can these impacts be mitigated?</p>

Responses

Comment 52-02

With respect to the potential adverse impacts on tourism and on the influx of new residents, the responses to comment numbers 21-03 and 36-06 address the same issues. Figure 3-6 has been revised in the Final EA (now Figure 3-7) to show approximately how large the Pilot Plant would appear from the same vantage point in comparison to the visibility of nearby manmade features, including the Kanab Municipal Airport, the Kane County Public Safety Facility, and the Kane County Landfill. Other potential impacts are described for respective resources in Chapter 3 of the EA.

Comment 52-03

The subject of this comment has been addressed in the response to comment number 21-03. Also, as stated in response to comment number 43-02, because the project would be a private enterprise (not owned by DOE) on property leased by SITLA, it would be subject to tax assessments.

Comment 52-04

As stated in response to comment number 37-01, the proposed Pilot Plant is intended as a demonstration facility, not an experimental facility. The Pilot Plant would demonstrate the process at a size that would provide economic performance data adaptable to a commercial-scale facility. Basic experimentation for the process was already completed in a laboratory model, but it is not directly scalable to a commercially economic size. Also, as stated in response to comment number 15-04, Viresco would be required to operate the facility in compliance with all applicable federal, state, and local laws, regulations, and ordinances as would be the case for all comparable commercial and industrial facilities. Respective regulations would require the maintenance of data and may require the submission of reports to demonstrate compliance, and the Pilot Plant would be subject to inspection by state regulators.

Other subjects of this comment have been addressed in the response to comment number 15-06.

Comment 52-05

As stated in response to comment numbers 15-06 and 24-03, Section 2.7.5 was revised in the Final EA to include a discussion on specific decommissioning activities that would occur.

Comment 52-06

The response to comment number 4-01 addresses the reclamation and restoration requirements in the terms of the lease between Viresco and SITLA. The terms of the lease specify that in the event that the leasehold is taken by condemnation, the costs of reclamation would be borne by the condemning authority.

Commenter 52 – Sky Chaney (continued)**Responses (continued)****Comment 52-07**

A stormwater retention basin would be constructed to hold stormwater runoff from the plant site. A lined evaporation pond would only be constructed after the demonstration period under the cooperative agreement and only if Viresco could procure funding to extend the operation time to 130 days. Alternatively, depending on the results of a water quality analysis, the wastewater may be treated through the Kanab municipal sewer system, or removed by commercial services for appropriate disposal. In that event, process water would be sent to the evaporation pond for retention and potential reuse. The pond would be constructed using a single layer HDPE liner over a compacted clay basin. HDPE is designed to be resistant to damage from UV and exposure to the elements and facilitate quick evaporation. Other facilities in Utah have used HDPE as a liner in evaporation ponds without incident. If a small, undetected leak occurred in the liner, then process wastewater could leach into the soils. Evaporating pond BMPs, such as leak detection systems would identify any leaks before the leaks could cause large-scale leeching of liquids into the soil. However, the risk for toxic contamination of groundwater is very low because the groundwater at the Pilot Plant site is estimated to be 100 feet below the ground surface, and problems with the evaporation pond would be detected and fixed prior to contamination.

Comment 52-08

Potential impacts to air quality are addressed in Section 3.5.2 of the Draft EA. The response to comment number 28-08 addresses the use of a scrubber.

Comment 52-09

Once the proposed Pilot Plant would be completed and operational, it would be an enterprise comparable to other privately owned enterprises in Kanab and Kane County. It would be subject to tax assessments and would likely result in the purchase of various goods and services locally.

Comment 52-10

The subject of this comment has been addressed in the response to comment number 6-09. The feedstock would primarily consist of woody waste; The emissions, risks, and other potential impacts from the use of this feedstock would be no greater than described for the use of coal.

Comment 52-11

The response to comment 40-10 addresses the issue of toxic emissions during the 30-day demonstration and the additional 130-day operations. As stated in response to comment number 6-01, DOE's proposed action is to provide financial assistance to Viresco. DOE's cooperative agreement would extend to the 30 days of operation during the first year

Commenter 52 – Sky Chaney (continued)

My Comments on EA Related to the Risks of Pollution and Toxicity

I and many others have submitted concerns about the potential toxicity and pollution of this project during the scoping process. The Draft EA did not adequately research these risks. In order to cover these issues adequately, the DOE needs to examine all the aspects of toxicity and pollution associated with this proposed project, and include alternatives for managing the risks of toxic exposure to the environment and to people. I ask that the DOE fully study and present their findings on the following issues in an EIS:

52-12

A. Danger of Coal Dust Jim Guthrie has stated at a Kanab Planning Commission meeting that Viresco Energy plans to process coal into a fine powder onsite, after an initial period of importing pre-processed coal. Coal dust is a major pollutant and health hazard for employees of the plant and if not well contained, will be a hazard for nearby county operations including the dump, the rodeo ground, and the new Kane County Sheriff Office and Jail.

Viresco needs to provide a complete description of its proposed coal processing activities and this need to be assessed by an expert to determine the level of risk involved.

If any coal dust is to become airborne, then a study of air circulation patterns needs to be completed in order to protect people in nearby facilities from harm.

B. Danger of Liquid Waste Products There are many EPA clean up sites associated with coal gasification plants scattered across the United States. The primary sources of pollution at these sites are the liquid waste products that have leaked into both soil and water sources.

Single-lined waste ponds commonly leak over time. Viresco Energy plans to utilize a single-lined waste pond at their proposed Kanab site. This presents a significant risk of pollution.

Richard Boardman, of Idaho National Laboratory, an expert invited to Kanab to speak publicly about the proposed coal gas plant, has mentioned that double-lining the waste ponds is an option for this project.

52-13

Southwest Utah is prone to serious deluges and flash floods. What are the risks of the waste pond overflowing? What will be the toxic impacts of this event?

Because this is a desert environment, birds and mammals may rely on the waste pond for a source of water. A study needs to be completed evaluating the risks to wildlife presented by the open waste pond.

A study needs to be completed of the risks associated with storage of this toxic waste in an open pond, including all possible ways that the toxics can escape into the environment, and the impacts of liquid waste products if they leak or escape containment.

C. Air Pollutants The Viresco Energy proposed coal gas plant will be emitting air pollutants for protracted periods of time, at all times of the year.

52-14

During winter, it is common for our area to experience an inversion layer along the Vermillion

Responses

Comment 52-11 (continued)

after construction. Because Viresco has expressed its interest in conducting additional testing of the process, DOE evaluated the potential impacts of an additional 130-day operational testing period. DOE is not aware of any specific or identified plans by Viresco for operation of the proposed Pilot Plant beyond the 130-day testing period.

Any further operation would depend on the objectives that the provider of such additional funding sought to achieve, something that is unknown at this time. Substantive changes in emission characteristics would be subject to additional environmental permitting processes of the state. If Viresco were to seek federal funding for additional upgrades or expansions to the Pilot Plant, a future NEPA review by a respective federal agency may be triggered and further environmental analysis would be undertaken at that time.

As stated in response to comment number 15-04, Viresco would be required to operate the facility in compliance with all applicable federal, state, and local laws, regulations, and ordinances as would be the case for all comparable commercial and industrial facilities. Respective regulations would require the maintenance of data and may require the submission of reports to demonstrate compliance, and the Pilot Plant would be subject to inspection by state and federal regulators under applicable laws.

Comment 52-12

The subject of this comment has been addressed in the response to comment numbers 27-05 and 28-04.

Comment 52-13

The response to comment number 9-01 addresses the future options considered by Viresco for process wastewater disposal after the DOE cooperative agreement ends. A lined evaporation pond would only be constructed if Viresco were able to procure funding to extend the operation time to 130 days. Alternatively, the process wastewater could be discharged to the Kanab municipal sewer system. The response to comment number 52-07 addresses the potential for impacts from groundwater contamination from an evaporation pond. The response to comment number 56-15 discusses Viresco's plans to manage the process wastewater and addresses provisions that could be implemented to exclude wildlife from accessing the evaporation pond if necessary.

Commenter 52 – Sky Chaney (continued)

52-14
(cont'd)

Cliffs. Every year, smoke from fireplaces in Kanab is trapped in this layer and causes pulmonary problems for some local residents.

The Viresco Energy project will add pollution to these inversion layers when they occur, exacerbating these health problems.

As study needs to be completed reviewing the incidence of inversion layers in the surrounding area, and the impact that toxic air pollution from this project will have on the health of the elderly and those with pulmonary problems when inversion layers are present.

Richard Boardman, of Idaho National Laboratory, an expert invited to Kanab to speak publicly about the proposed coal gas plant, has mentioned that placing scrubbers on the stacks of the coal gas plant is an option for this project. Scrubbers will reduce the amount of air pollution from this proposed project.

52-15

D. **Economic Impacts** The fiscal impact of this project needs to be fully examined. Local realtors have reported in the local newspaper a loss of home sales associated with the prospect of a coal gas plant coming to Kanab.

A survey of 70 Kanab businesses found the 89% of the businesses do not want a coal gas plant to be built in Kanab. Many commented that the coal gas plant would negatively impact their businesses.

A study needs to be completed that collects the concerns of local business owners and examines them in a systematic and thorough manner in an EIS.

E. **Radioactivity** Coal fly ash has been found to be highly radioactive. An article in the Scientific American states that the levels of this radioactivity can be greater than those found for stored nuclear waste at power plants. Refer to the article here:
<http://www.scientificamerican.com/article.cfm?id=coal-ash-is-more-radioactive-than-nuclear-waste>

52-16

What radioactive exposures and emissions will be present in this project? How will this affect the people who work at the facility, the environment, and our community of Kanab? What alternatives can be considered to mitigate the risk of exposure to radioactivity?

F. **Danger from Accidents and Unexpected Toxic Emissions** Energy plants that handle and emit toxic substances are prone to accidents where toxics are emitted into the environment. Coal gasification facilities have a history of toxic and adverse effects on the environment and on people.

Specifically, accidents have occurred at coal gasification facilities. Reference:

<http://tribstar.com/local/x1155750267/Two-killed-in-synthetic-gas-explosion-at-coal-plant-north-of-Terre-Haute>

<http://www.14wfe.com/story/12549104/gasification-plant-accident-victim-identified?redirected=true>

Responses

Comment 52-14

The response to comment number 13-01 addresses the analysis of emissions in the Final EA. As stated in response to comment number 21-02, text has been added to the Final EA in Chapter 4 relating to cumulative impacts explaining that thermal inversions have been known to occur in Kanab. During winter months, the UDAQ issues wood burning alerts through the news media and over the internet when ambient concentrations of PM 2.5 are elevated. Such wood burning alerts have been issued in northern Utah counties, including Salt Lake/Davis, Utah, Weber, and Cache; but state alerts are not issued for Kane County. The subject regarding the use of scrubbers for reductions of emissions by the proposed Pilot Plant has been addressed in the response to comment number 28-08.

Comment 52-15

The subject of this comment has been addressed in the response to comment numbers 21-03 and 36-06.

Comment 52-16

As stated in Section 2.7.3 of the EA, the Pilot Plant would not emit radionuclides in quantities that would pose a health hazard based on the size of the proposed facility and the small concentrations of such materials in the feedstock.

Commenter 52 – Sky Chaney (continued)

52-17 | What are the risks of accidents or unplanned emissions occurring with this project? What will the damage be? What will be emitted? How will a toxic emission affect the community of Kanab and the area near the plant where the Kane County Rodeo Grounds, Dump, Public Safety Facility and Jail are located? What will the short and long term effects of an unplanned toxic emission be? How much may it cost the City of Kanab to clean up?

52-18 | **G. Risks Associated with a Vacant or Abandoned Coal Gas Plant** There is a risk that Viresco Energy will either leave their coal gas plant vacant for protracted periods of time, or even abandon it. On 1/13/11 at a Kanab Planning Commission meeting, Viresco Energy President, Jim Guthrie, stated that his coal gas plant may be left unused for protracted periods of time if funding becomes unavailable to operate it. Mr. Guthrie, himself, has owned a business that filed for bankruptcy in California approximately two years ago, highlighting the possibility that Viresco Energy may end up abandoning the coal gas plant. What are the risk levels for these kinds of occurrences? If toxics are left on the site, how will the environment and people be impacted? What will Kanab City need to do if the plant is abandoned with toxic materials on site? What will be the financial impact to Kanab City taxpayers if the plant is left vacant or abandoned?

52-19 | Last but not least, the NEPA process for this project needs to examine a range of alternatives that were not included in the Draft EA. One such alternative is to consider the siting of this project in a different location than inside the city limits of Kanab.

Respectfully,

Sky Chaney
President ~ Taxpayer Association of Kane County

Responses

Comment 52-17

The subject of this comment has been addressed in the response to comment number 40-10.

Comment 52-18

As stated in response to comment number 24-03, Section 2.7.5 was revised in the Final EA to include a discussion on specific decommissioning activities that would occur. See also responses to comments 4-01 and 52-06.

Comment 52-19

The subject of this comment has been addressed in the response to comment number 8-01.

Commenter 53 – Mike Noel

Joseph Zambelli - Viresco Energy Coal Gasification Plant EA

From: "Mike Noel" <mnoel@xpressweb.com>
To: <joseph.zambelli@neil.doe.gov>
Date: 9/15/2011 5:27 PM
Subject: Viresco Energy Coal Gasification Plant EA
CC: <mnoel@xpressweb.com>

Dear Mr Zambelli

53-01

I am writing to voice my support again for the Coal Gasification Test Facility in Kanab, Utah. After reading the Draft EA, I am convinced that no significant impacts will result from the siting this facility adjacent to the county landfill. As an elected official representing Kane, Garfield, Wayne, Piute, Beaver, Washington, Iron and Sevier Counties for the past 9 years, I have consistently supported energy projects that would benefit not only my district but the State of Utah and the Nation as a whole. The technology that was discovered by scientists and engineers at the College of Engineering Center for Environmental Research and Technology is sound as has been demonstrated at CE-CERT. As you stated in your summary of the project at the public meeting, there has been much to do about very little or no impacts to the human environment by constructing this test facility.

53-02

Unfortunately, the facts surrounding this project have been purposely mis-represented by Sky Chaney, the founder and President of the so called Kane County Taxpayers Association. Mr Chaney has used the tax free status of the KCTPA to engage in the local political process, disseminating false and misleading information to the public, suing the City of Kanab and generally creating hate and discontent in our community. I have included a copy of an email received today from Mr Chaney, encouraging the members of the KCTPA to send in comments on the EA. My concern is with the first suggestion that you extend the EA comment period for some undetermined length of time. I would strongly urge you to not consider doing this as I feel that the minimal impacts associated with the project have been adequately addressed and that the requirements of the National Environmental Policy Act have been fully met. Over the course of my political career I have come to understand the tactics of the radical environmental community. Their main tactic is to try and stall and delay projects and run up the costs of getting permits etc. such that the projects becomes uneconomically unfeasible. This is exactly what is going on in our community and I hope the DOE can see through the charade.

53-03

It is inconceivable to me how people could be so misled by this individual into thinking that this proposal involves emitting large amounts of air pollution. From reading the proposed action it is my understanding that during the 30 day periods with coal is heated to release the methane gas (natural gas) the emissions would not even require a state or federal air quality permit because the emissions are considered De Minimis by the Utah Division of Air Quality.

I would like to address some of the issues that Mr. Chaney has asked members of the Taxpayers Association to consider in the EA which I believe have been addressed. Cumulative

4.0 CUMULATIVE IMPACTS:

4.2.1 Land Use: Construction and operation of the proposed project in combination with the Kane County Public Safety Facility could adversely impact uses of recreational areas associated with the Jackson Flat Water Supply Storage Project.

53-04

Response from Representative Michael Noel (Executive Director and General Manager of the

Responses

Comment 53-01

Comment noted.

Comment 53-02

Comment noted.

Comment 53-03

Comment noted.

Comment 53-04

Comment noted.

Commenter 53 – Mike Noel (continued)

**53-04
(cont'd)**

ne County Water Conservancy District (owner and developer of the Jack Flat Reservoir) . A full Environmental Assessment was completed on this reservoir project by the Army Corps of Engineers in conjunction with the KCWCD. The proposed gasification plant will have zero negative impacts to the reservoir which was constructed primarily for storage of the irrigation water. It will have no more negative impacts to the recreational use of the reservoir than the Kane County Jail or the Kane County Landfill, the Shotgun Range, and the Kane Plex which are in the same general area as the proposed gasification test facility.

This is not an analytical statement and not sufficient to adequately disclose potential impact (s).

4.2.2 Aesthetics: Construction and operation of the proposed project in combination with the Kane County Public Safety Facility could adversely impact views from the recreational areas associated with the Jackson Flat Water Supply Storage Project and, to a lesser extent, residences to the northwest of the Pilot Plant site. □ This is not an analytical statement and not sufficient to adequately disclose potential impact(s).

53-05

Michael Noel Same response. No anticipated impacts from heating coal or other materials and flaring methane.

4.2.4 Cultural Resources: If any human remains are discovered, then such a discovery could be viewed as a cumulative impact of the projects. I ask you when would disturbance of a burial not be considered an impact, cumulative or otherwise? This is not an analytical statement and not sufficient to adequately disclose potential impact(s).

53-06

Response from Representative Mike Noel : All Cultural Resources which may be discovered at the SITLA lease site including human remains which have been found at the reservoir site will be completely mitigated per the National Historic Preservation Act and Native American Graves Repatriation Act. The same archaeologist that completed the Phase Inventory on the Jackson Reservoir site, completed the surveys on the State Institutional Trust Lands Site and found no significant archaeology.

Responses

Comment 53-05

The subject of this comment has been addressed in the response to comment number 24-07.

Comment 53-06

Comment noted.

Commenter 53 – Mike Noel (continued)

53-07

4.2.4 Cultural Resources: The discovery of prehistoric human remains at an archaeological site investigated during the course of the Jackson Flat Water Supply Storage project, however, has heightened concerns among the Kaibab Band of Paiute Indians that human remains may be encountered during construction for the present project. Response from Representative Noel: What does the consulting archeologist and SHPO have to say on the likelihood of discovering human remains if excavation for this project were to occur? Mr Kenny Wintch, chief archaeologist for SITLA, and project supervisor for the Jackson Reservoir site was the authorized officer that reviewed the Cultural Resources Report for the Gasification Site. He is well aware of the potential for any additional human remains and will be involved with any future issues that involved human remains on the SITLA lease site. The report indicates that the potential for burials and significant archaeology at the SITLA site is minimal.

5.2 Irreversible or Irrecoverable Commitment of Resources

Water resources used by the Pilot Plant would be treated and recycled in the process for reuse under the DOE cooperative agreement for 30 days of operation or possibly returned to the environment through an evaporation pond under future operations.â€œ

53-08

Response from Representative Noel : Water resources used for the site will be minimal (less than 5 acre feet per year). To put that in perspective that is the amount of water used in one growing season on 1 acre of alfalfa hay. Hardly something to be concerned with . Effluent from the pond will go into the Kanab City Sewers and the facultative evaporative clay lined ponds south of town and west of the airport.

Facility Processes and Equipment (Section 2.7.2.) makes no mention of an evaporation pond; no evaporation pond is discernable in Figure 2-3. Please explain what is meant by returned to the environment. Would this effluent truly be left to evaporate in a pond?

Temporal Analysis of effects is inadequate:

DOE intention is to only be involved with this project out to the 30 operation-day per year mark, as per a cooperative agreement with the proponent. However, DOE is fully aware the proponent intends to achieve a 130 operation-day mark and DOE acknowledges this in EA section 2.8: Consideration of Connected Actions.

53-09

Response from Representative Noel: Any changes in the operation of the plant which could impact air quality will be fully evaluated by the Utah Department of Environmental Quality Division of Air Quality. The purpose of the test facility as DOE knows is to test this new potentially more efficient gasification process which would produce cleaner fuels for our nation. If the plant does in fact run a test in the future for 120 days, the impacts would still not meet the threshold to be a significant impact to the human environment. There is more coal

Responses**Comment 53-07**

The subject of this comment has been addressed in the responses to comment numbers 24-07 and 35-11.

Comment 53-08

The subject of this comment has been addressed in the response to comment number 51-25.

Comment 53-09

Comment noted.

Commenter 53 – Mike Noel (continued)

burned in the local elementary school and high school each year than would ever be heated and flared in this test facility.

Nowhere in the EA have I discovered a projection (time frame) of how many years the plant would likely be operated to achieve the 130 operation-day mark or even the 30 operation-day mark. Therefore this environmental assessment is deficient in making full disclosure of what actions are intended as required by NEPA and its implementing CEQ regulations. Please correct this deficiency.

Final Summary from Representative Noel: The following is a copy of the letter sent by Mr Chaney to the members of the Kane County Taxpayers Association today. For your information, the Utah Taxpayers Association a reputable taxpayers organization that has been in operation since 1922 does not even recognize the Kane County Taxpayers Association as a legitimate organization. The Kane County Taxpayers Association was cited by the State of Utah for operating in violation of state law for not registering with the state. A \$10,000 fine was assessed for repeated violations of state law. The KCTPA settled the matter by paying a \$2000 fine. The point being in all this is that a small number of people led by Sky Chaney have used every means to try and stop this plant with little or no factual information that is would do harm to the human environment. Our elected officials and the majority of the citizens in Kanab do in fact support the plant as evidenced by the latest primary election wherein the 3 opposition candidates generated 44% support while the other 5 candidates generated 56% of the votes with only 46% of the public voting. In the upcoming general election, I believe the opposition candidates with in fact be embarrassed since they will be soundly defeated. So in terms of public opposition, the statement should be made that the majority of elected officials and citizens in Kane County support the test facility.

EMAIL SENT TODAY FROM MR CHANEY'S SO CALLED "KANE COUNTY TAXPAYERS ASSOCIATION?"

*****TPA Update – Please Send Your Comments to the DOE by Friday*****

Dear TPA Member:

If you care about the coal gas plant proposed for Kanab, here is an opportunity to make a difference. Last month the Department of Energy (DOE) issued their draft Environmental Assessment (EA) for the proposed Viresco Energy LLC Coal Gasification Plant. In May and June many of our members submitted scoping comments to guide the extent of this environmental assessment.

You can read the Draft EA here:

We believe that this EA did not adequately assess the risks associated with this proposed coal gas plant in our community.

Here is your opportunity to comment on the EA.

Please write a comment letter and email it to: joseph.zambelli@netl.doe.gov

Title your letter: [Comments on the Utah Coal and Biomass Fueled Pilot Project](#)

The last day to officially submit comments is tomorrow, Friday. If you need more time, then write them over the weekend, as the DOE has stated that they will make an effort to accept comments after the deadline. It is preferable to get our letter emailed by Friday.

*Below are suggestions on what to include in your comment letter.

I want to thank everyone who is submitting comments as this DOE approval process is a crucial step in protecting us from the adverse harm that can take place from the proposed coal gas plant.

Responses**Comment 53-10**

Comment noted.

Commenter 53 – Mike Noel (continued)

Respectfully,

Dr. Sky Chaney ~ President, Taxpayer Association of Kane County

Suggestions On Comments to Submit on the EA of the Viresco Coal Gas Plant

1. Ask the DOE to grant a **time extension for the Comment period** and give reason(s) why this is needed (eg. research into info used to make effects evaluation is complex and need more time to provide intelligent comment).
2. Insist that due to the amount of controversy generated, DOE **complete an EIS for this project**. This Environmental Impact Study will result in a much more comprehensive review of the risks associated with this coal gas plant to our community. It will also provide the opportunity to mitigate adverse effects by developing an alternative location to site the plant.
3. If you commented during the earlier scoping period (May and June), drag those comments out and determine if the DOE addressed them fully in their analysis. If not state that you believe **they did not address your comments at all or address them adequately**. Insist that they **address the issues in an EIS**.
4. Below is a **list of possible comments** to include in your letter to the DOE. Be sure to use your own words in presenting these sample issues... and add your own additional comments in your letter. Make suggestions on how they could improve the analysis if you have one.

Email your Letter to: joseph.zambelli@netl.doe.gov

Title your letter: Comments on the Utah Coal and Biomass Fueled Pilot Project

Be sure you provide your **name and address**.

If you are concerned about anonymity, ask that your name and address not be disclosed in the publication of Comments which will be included in the Final EA.

Be respectful, but insistent. Write clearly. Be sure to state what you want or expect DOE to do with respect to your point.

Possible Comments: Draft EA for Utah Coal and Biomass Fueled Pilot Plant (DOE/EA-1870)

1.0 PURPOSE AND NEED:

The Purpose and Need to pursue this type of research, nationally, is agreed. However, the **need** to site this plant, specifically, in Kanab is not demonstrated. Say why you think so and what DOE should do to fix this.

2.0 ALTERNATIVES:

Why wasn't an alternative location analyzed? The Congressional earmark language only specifies the State of Utah. I do not accept DOE's rationale the Proposed Action and the No Action constitute a "reasonable range of alternatives".

Explain why?

2.7.5 DECOMMISSIONING

"The Pilot Plant would be decommissioned and the site restored no later than the end of the site lease period."

What does decommissioned mean exactly? Would all the structural components of the plant be dismantled and removed from the site?

3.0 EXISTING CONDITIONS AND ENVIRONMENTAL CONSEQUENCES

Ask that DOE demonstrate an analysis occurred. Evaluative statements are made without making a direct (or disclosure, if indirect) connection with the analysis performed and at what scale.

3.10 SOCIO-ECONOMICS:

Responses

Commenter 53 – Mike Noel (continued)

DOE demonstrated a preconceived notion leading to a Finding of No Significant Impact instead of being unbiased, fair and balanced in evaluation of effects. This is illustrated in the verbiage used on page 54, 4th paragraph. "Process water from the Pilot Plant will be recycled..... ..process wastewater will have no impact to the City of Kanab's wastewater system." [Emphasis is mine.]

4.0 CUMULATIVE IMPACTS:

4.2.1 Land Use: "Construction and operation of the proposed project in combination with the Kane County Public Safety Facility could adversely impact uses of recreational areas associated with the Jackson Flat Water Supply Storage Project."

This is not an analytical statement and not sufficient to adequately disclose potential impact (s).

4.2.2 Aesthetics: "Construction and operation of the proposed project in combination with the Kane County Public Safety Facility could adversely impact views from the recreational areas associated with the Jackson Flat Water Supply Storage Project and, to a lesser extent, residences to the northwest of the Pilot Plant site." This is not an analytical statement and not sufficient to adequately disclose potential impact(s).

4.2.4 Cultural Resources: "If any human remains are discovered, then such a discovery could be viewed as a cumulative impact of the projects." I ask you when would disturbance of a burial not be considered an impact, cumulative or otherwise? This is not an analytical statement and not sufficient to adequately disclose potential impact(s).

4.2.4 Cultural Resources: "The discovery of prehistoric human remains at an archaeological site investigated during the course of the Jackson Flat Water Supply Storage project, however, has heightened concerns among the Kaibab Band of Paiute Indians that human remains may be encountered during construction for the present project." What does the consulting archeologist and SHPO have to say on the likelihood of discovering human remains if excavation for this project were to occur?

5.2 Irreversible or Inretrievable Commitment of Resources

"Water resources used by the Pilot Plant would be treated and recycled in the process for reuse under the DOE cooperative agreement for 30 days of operation or possibly returned to the environment through an evaporation pond under future operations."

Facility Processes and Equipment (Section 2.7.2.) makes no mention of an evaporation pond; no evaporation pond is discernable in Figure 2-3. Please explain what is meant by "returned to the environment". Would this effluent truly be left to evaporate in a pond?

Responses

Commenter 53 – Mike Noel (continued)

Temporal Analysis of effects is inadequate:

DOE's intention is to only be involved with this project out to the 30 operation-day per year mark, as per a cooperative agreement with the proponent. However, DOE is fully aware the proponent intends to achieve a 130 operation-day mark and DOE acknowledges this in EA section 2.8: Consideration of Connected Actions.

Nowhere in the EA have I discovered a projection (time frame) of how many years the plant would likely be operated to achieve the 130 operation-day mark or even the 30 operation-day mark. Therefore this environmental assessment is deficient in making full disclosure of what actions are intended as required by NEPA and its implementing CEQ regulations. Please correct this deficiency.

Thank you for the opportunity to comment on this EA.

Sincerely,

Utah State Representative Michael Noel House District #73, Representing all or part of the following counties in Southern Utah, Kane, Garfield, Beaver, Wayne, Piute, Sevier, Washington, Iron Counties

Responses

Commenter 54 – Joan Thacher

Joseph Zambelli - Draft EA comments

From: "Jan Russell" <janrussell@kanab.net>
 To: "Joseph Zambelli" <Joseph.Zambelli@NETL.DOE.GOV>
 Date: 9/16/2011 6:51 PM
 Subject: Draft EA comments

Sept. 16th, 2011

RESPONSE TO THE DRAFT EA
 UTAH COAL AND BIOMASS FUELED PILOT PROJECT

Dear Mr. Zambelli –

It was abundantly clear from your and Mr. Driscoll's comments at the meeting on August 30th that this is an insignificant project not deserving of the time, effort and money that has been put into it. This attitude is reflected in the Draft EA. It appears a forgone conclusion that this facility will be built here in Kanab. Because of this, I am loath to spend much of my precious time responding to the Draft. Do my comments matter? I think not. Yet this is your job, to answer the questions and respond to the comments of those most effected by this or any of your projects. Yes, this is a piddly little project in comparison to your others, I'm sure. However, for those of us living in Kanab, a place that shares the airshed with natural marvels like Zion National Park, Bryce Canyon, Grand Staircase National Monument, it is not. IT IS A BIG DEAL! We are acutely aware that this would not even be a blip on the radar if it were almost anywhere else. BUT IT IS NOT.

I'll begin with my comments on the Draft's responses to my initial scoping comments.

LOCATION

54-01

You did not respond to one of my questions about the suitability of the location. You don't have any criteria for suitability, do you? The Draft (pg.31 3.2.2) claims that because the Kane Co. Public Safety Building and the Landfill are already there, the viewshed is acceptable for a gasifier. How is an obviously industrial facility with two, 60ft+ smokestacks and ugly pipes comparable to the landfill or the Public Safety Building? Can you please show how you compare them? So, when the Viresco facility is built, then we could get a Fischer-Tropsch gasifier, too, because we have another gasifier in the viewshed already? Is this how it works?

ZONING

54-02

On page 30, the last sentence says "It is important to note that Kanab City Planning and Zoning approved the zoning change." but nowhere does it state that they did so based on the 30-days/year, small source exemption parameters. This was a clear misrepresentation of the facts by Viresco, since as soon as Guthrie had the general plan and zoning changes approved he started telling the public that he might run up to 80 days/year. Therefore, your statement is misleading and belies the deceit with which Viresco dealt with our city officials from the beginning.

Responses**Comment 54-01**

The subject of this comment has been addressed in the response to comment number 32-03. The Draft EA considered the aesthetic qualities of Kanab, and the qualitative effects of the proposed Pilot Plant on the local viewshed. Figure 3-6 has been revised in the Final EA (now Figure 3-7) to show approximately how large the Pilot Plant would appear from the same vantage point in comparison to the visibility of nearby manmade features, including the Kanab Municipal Airport, the Kane County Public Safety Facility, and the Kane County Landfill. Figure 2-3 in the EA is a conceptual illustration of the Pilot Plant showing a single exhaust flare structure, not two "smokestacks."

As described in response to comment number 40-31, the Pilot Plant would gasify coal into a synthesis gas that would be combusted. The flare would be comparable to a natural gas flare and not to a "smokestack" associated with a coal combustion facility. As stated in response to comment number 51-29, the synthesis gas would be suitable for further processing to a liquid fuel or substitute natural gas. However, because the Pilot Plant would be a demonstration project at a scalable size to provide economic data that would be used to assess the commercial feasibility of the steam hydrogasification process, the synthesis gas would be combusted properly in a flare system. No fuel products or electricity would be produced by the proposed project.

Comment 54-02

As stated in response to comment 15-17, DOE considers land use planning and zoning decisions to be under the jurisdiction of the Kanab City Planning and Zoning Department. That department determined that the Pilot Plant is consistent with the zoning designation of the site and the master plan. The response to comment number 6-01 explains DOE's consideration of the additional Pilot Plant operational period as a connected action.

Commenter 54 – Joan Thacher (continued)

INFRASTRUCTURE

54-03

I specifically asked, in my scoping comments, about power outages and their effect on plant operations. My questions were not answered. We have blackouts and brownouts often here in Kanab, particularly during snowstorms and other weather events. On page 10 of the draft it states, "The plant would be operated using both a computerized performance reporting and documentation system...to ensure that monitoring and other management activities are performed correctly." So, what happens to these systems during power outages? I request that this be analyzed before the final EA is drafted.

ECONOMIC IMPACTS

54-04

Again, you did not respond to even one of my questions about economic impacts. I see in the Draft that you claim the existing facilities (i.e. communication towers, landfill, public safety bldg -which is not yet in operation-etc.) "have not detracted from regional tourism". How did you draw that conclusion? Again, you are comparing an ugly, obviously industrial structure with two 60ft+ smokestacks with these other structures. How do you know if visitors may shorten their stay because of this facility? Have you compared it to other sites in tourist towns? Wouldn't this be the only factual source of information to make this statement?

54-05

Mr. Guthrie/Viresco told citizens that there would be 60 construction jobs. The Draft says 30. What is the reason for the discrepancy?

54-06

Finally, regarding real estate values. Kanab is a beautiful, clean town that attracts many retirees with good retirements that go directly into the economy. Real estate values have risen considerably in the last 6 or 7 years. There are several high-end subdivisions in the planning stages near where the plant is to be constructed. Will or will not a plant with two smokestacks effect real estate values? Why was this not evaluated in the draft? The draft claims that the plant will be an economic benefit to the community, however, you did not even begin to analyze the possible negative effects on the economy.

NOISE/ODORS

54-07

On page 30 of the draft it states, "Offensive odors are not anticipated BUT any odors would be expected to dissipate effectively before reaching any residential areas...". I find this statement to be contradictory. You claim odors are not anticipated. You do not give any factual evidence to support this statement and then go on to say that there might be odors, but those will dissipate. What facts are you basing these statements on? Evidently you are not aware that there are residences within .5 mile of the site, in fact I lived in one 12 years ago right near the airport. The airport manager and his wife live at the airport also. Will offensive odors dissipate before they reach there? Your conclusions on page 55 about "The closest sensitive receptors... are...over one mile to the northeast on S. Hopi Dr." is incorrect.

54-08

You did not analyze the noise coming from the functioning gasifier at all that I can see. There is some mention of construction noise, but none about noise coming from the pilot plant. You show a chart (Table 3.9-1.) with decibel levels on it but do not compare that to the decibels emitted from the pilot plant. Why? How can you call this a FONSI when you haven't analyzed all the data?

Other comments on the Draft document

Responses

Comment 54-03

As part of the safety systems incorporated into the Pilot Plant, the plant design consists of redundant systems to ensure that automatic shut-offs in the computing system and manual shutdown capabilities are available when needed. Therefore, the plant would be able to safely shutdown during emergencies, including power outages, if required.

Comment 54-04

The subject of this comment has been addressed in the response to comment number 21-03.

Comment 55-05

DOE uses the NEPA process and in this case the EA to properly inform the public about the proposed project and all of its attributes. As stated in Section 3.10.2.1, "During construction, approximately 25 construction jobs would be created as a result of the project."

Comment 54-06

The subject of this comment has been addressed in the responses to comment numbers 21-03 and 36-06.

Comment 54-07

As stated in the Draft EA, no odors from the facility would be expected. Additional information has been added to the Final EA in Section 3.5.2.4 for clarification

Comment 55-08

The text in Section 3.9.2 of the Final EA has been updated to include noise levels from the Pilot Plant's equipment. Although sound levels from equipment (e.g., the flare and gasifier) would depend on the final design and are unknown at this time, it is expected that equipment design would take into consideration any OSHA regulation to protect workers and the public. Per OSHA standards, the maximum acceptable noise level for any continuously noise-generating equipment is 90 dBA (29 CFR 1910.95). Assuming a worst-case sound level of 90 dBA at the Pilot Plant's fence line, it is estimated that at half a mile from the property, the potential sound level from the plant would be less than 50 dBA, which is considered relatively quiet. As described in response to comment number 15-07, a new Figure 3-5 was added to the Final EA which shows that there are no residential buildings within a half mile of the proposed Pilot Plant. Sound levels at residences would be reduced further by the increased distance such that noise impacts during operations would be negligible to minor at the nearest residential receptors.

Commenter 54 – Joan Thacher (continued)

- 54-09** | **PAGE 1** – The second paragraph states, “These operations would be limited toand would probably not exceed 130 days of operation in any year...”. Probably not? Exactly what does this mean? What are Viresco’s plans for the operation of this facility? 30 days/year? 130 days/year? 250 days/year? This is precisely the kind of information that is being withheld from the public. Obviously we are not just approving a 30 day/year operation as the community was told by Mr. Guthrie in the beginning.
- 54-10** | **PAGE 2 – Purpose and Need** -You use the term “renewable energy resources” on this page. The initial testing is to be using coal. How is coal a renewable resource? You also mention “protecting our environment” yet the draft contains almost two pages (section 4.2.6) of the negative effects of greenhouse gases which coal mining and gasification contribute to. Therefore, I find “renewable energy resources” and “protecting our environment” to be misleading and inaccurate terms to use regarding this project.
- 54-11** | **PAGE 10** – It states in the last section of this page that one of the primary goals of testing would be to determine “The fate of coal impurities”. Does this mean that Viresco does not know where those impurities end up? Do they end up in the air? In the ash? In the water?
- 54-12** | **PAGE 11** - It states on this page that the lot currently consists of “shrubs and grassland”. It is obvious that there was no site visit, because you would know that there is no “grassland” at this site but sagebrush and mature juniper trees.
- 54-13** | **PAGE 21** - It is statements such as the one in paragraph 5 on this page that leaves many questions in the minds of those of us who will be impacted by this project and I quote, “Viresco may also consider adding some form of gas cleanup processing and hydrogen separation. The details are not available at this time...so that cannot be identified or addressed.” Viresco does not have to supply details of all their possible processes? How can the public make an adequate assessment of the risks of this project without all the facts?
- 54-14** | **PAGE 22** - Table 2.7-3 It was mentioned at the meeting at the KMS on Aug 30th that there were errors regarding water issues in the Draft. There seems to be an error on this table and, if not, I would like this question clarified. The table reads that for Process Water there would be 1,270 gpd used during the 30 day operation, yet 3,000 gpd during the 120/130 day operation even though the amount of coal (5 tpd) remains the same. Why would there be over twice the amount of water used during the extended operation?
- 54-15** | It also states in this table that the solid waste would be disposed at an “appropriate landfill”. Where is this “appropriate landfill”?
- 54-16** | **PAGE 23** – 2.9.3 Surface Water – It states, “There are no catalogued lakes or reservoirs in the drainage basin”. Does it not mention Jackson Flat because it’s not catalogued? Or because it’s not completed?
- 54-17** | **PAGE 30** – Here is an troublesome inconsistency in the draft, I quote Section 3.1.2 paragraph 2 “Plant stack could be up to 67 feet in height” yet page 32 says, “stack (possibly up to 72 feet)”. So, which is it? Why doesn’t Viresco know exactly how high the stack is going to be? We were originally told 60 ft stacks. 72 feet is a lot higher than 60.
- I have many more questions, however, today is the Sept. 16th deadline for submitting

Responses

Comment 54-09

The subject of this comment has been addressed in the response to comment number 6-01.

Comment 54-10

Implementation of the project would demonstrate the feasibility of converting coal and woody biomass into syngas via the SHR process, and ultimately into fuels, such as substitute natural gas and sulfur-free Fischer-Tropsch diesel, which are cleaner burning than standard fuels currently utilized, such as unleaded gasoline. DOE views this demonstration as a potential step toward larger scale use of such cleaner burning fuels, which would yield environmental benefits of reduced releases of undesirable emissions. Initial testing would utilize coal as the feedstock, but further testing would include a blend of coal and woody biomass, to determine the feasibility of a reduced reliance on coal in the process. Woody biomass is considered a renewable resource because it can be harvested and re-grown and, in terms of CO2 being a primary GHG of concern, is considered carbon neutral, because plants absorb their carbon from the atmosphere during photosynthesis. It is also important to note that Viresco would utilize woody biomass wastes (e.g., sawdust and paper wastes), which would be a beneficial reuse, or recycling, of vegetative material already harvested for other purposes.

Comment 54-11

As a demonstration project, the proposed Pilot Plant would provide data relating to the steam hydrogasification process at a scalable size to evaluate the economic feasibility of commercializing the process at other potential locations. Characterizations of waste streams to determine the methods of disposal as non-hazardous or hazardous wastes would be important aspects of these evaluations for purposes of costing the disposal requirements of a commercial facility.

Comment 55-12

DOE has visited the site multiple times, the most recent visit occurred in August 2011. Section 2.5.2 has been revised as follows: "The proposed project site is an existing undeveloped lot that currently consists of shrubby and herbaceous vegetation."

Comment 54-13

The response to comment number 6-01 explains DOE’s consideration of impacts during the 30-day demonstration period under the cooperative agreement with Viresco and also during an additional 130-day operational testing period as a connected action. As stated in response to comment number 34-04, impacts due to continued operations by Viresco of up to 130 days of additional testing are addressed in each resource area in Chapter 3 of the EA as a connected action, and the

Commenter 54 – Joan Thacher (continued)**Responses (continued)****Comment 54-13 (continued)**

impact analysis for this EA has been bounded by these assumptions. In the future, Viresco may consider other options for the management of process wastewater and may consider adding some form of gas cleanup processing and hydrogen separation. The details of these potential actions are not known at this time and Viresco does not intend to pursue any of these options during DOE's involvement. Such changes would likely require the acquisition of approvals or permits from state agencies having jurisdiction over environmental compliance. Future NEPA review by a respective federal agency would be triggered in the event that Viresco were to seek federal funding for additional upgrades or expansions to the Pilot Plant.

Comment 54-14

Table 2.7-3 in the Draft EA is Table 2.8-3 in the Final EA and has been updated to reflect that approximately 3,290 gpd and 4,130 gpd of water would be required for process water demand under the proposed action and connected action, respectively. The increase in water demand under the connected action primarily results from equipment differences between the proposed action and the connected action – under the connected action, Viresco is considering the possible use of a steam propane reformer system to generate hydrogen onsite. The steam reformer operation would increase the water rate to the boiler to generate additional steam feed for the reformer.

Comment 55-15

The subject of this comment has been addressed in the response to comment number 15-09.

Comment 54-16

The subject of this comment has been addressed in the response to comment number 15-16. Potential cumulative impacts to this reservoir are discussed in Section 4.2.

Commenter 54 – Joan Thacher (continued)**54-17
(cont'd)**

comments. I am very disappointed that the DOE would not even consider extending the comment period. I feel that the Draft is filled with inconsistencies and unsubstantiated statements. Regardless of the attitude of the agency towards this earmarked project, we, as the citizens of where this project is to be sited have a right to have our concerns and questions answered. Even at the meeting on August 30th, when we asked Mr. Shockley (Project Manager) who would be monitoring the facility, he told us "The EPA". Is even this an accurate statement? As far as we know, Viresco will be monitoring the facility. This causes great concern among those of us living near the project.

I hope you will consider this and all submitted comments when finalizing the EA.

Joan Thacher
834 W. Navajo Dr.
Kanab, UTAH 84741
janrussell@kanab.net
435-644-2320

Responses**Comment 54-17**

As stated in response to comment number 15-17, the wording on page 1 of the conditional use permit authorizes a 60-foot tall gasifier with a 67-foot tall exhaust structure "plus the additional height of required and approved flare enclosures". The Final EA has been revised to clarify these dimensions. The maximum height of the exhaust flare structure, including the enclosure structure, would be approximately 72 feet. It is not unusual for specific details of a final design to be undetermined during the planning stage of a project, which is when environmental studies under NEPA are completed. Therefore, impacts may be based on reasonable assumptions about design conditions and would remain valid provided that the final design does not substantially alter the assumptions and introduce new impacts.

The response to comment number 20-01 addresses the request to extend the comment period. The response to comment number 15-04 addresses the regulatory requirements and oversight that would apply to Pilot Plant operations.

Commenter 55 – Joan Thacher

Joseph Zambelli - Utah Coal & Biomass Fueled Project

From: "Jan Russell" <janrussell@kanab.net>
To: "Joseph Zambelli" <Joseph.Zambelli@NETL.DOE.GOV>
Date: 9/18/2011 9:20 AM
Subject: Utah Coal & Biomass Fueled Project

Dear Mr. Zambelli -

55-01

One additional comment I'd like to make on the Draft EA. I believe that the draft should have analyzed an alternative site for the pilot project. I request that this be done before finalizing the EA.

Thank you,

Joan Thacher
834 W. Navajo Dr.
Kanab, UTAH 84741

Responses

Comment 55-01

The subject of this comment has been addressed in the response to comment number 8-01.

Commenter 56 – Manuel Savala

Kaibab Band of Paiute Indians



September 13, 2011

Mr. Joseph Zambelli
NEPA Document Manager, M/S:807
U.S. DOE – National Energy Technology Laboratory
3610 Collins Ferry Road
PO Box 880
Morgantown, WV 26507-0880

Submitted via email to: joseph.zambelli@NETL.DOE.GOV

Re: **Utah Coal and Biomass Fueled Pilot Plant EA**

The Kaibab Band of Paiute Indians is responding as a stakeholder to your request for comments regarding the draft Environmental Assessment and proposed Finding of No Significant Impact for the Utah Coal and Biomass Fueled Pilot Plant project in Kane County, Utah. The comments, questions, and concerns in the letter before you represent a consolidation or summary of those received from various government departments, an Advisory Group, and resource specialists after their review of this draft EA.

We must first indicate our displeasure at the Department of Energy's refusal to honor our request for an extended deadline for comments to accommodate our governmental needs. As the deadline was short to begin with and extensions are often granted in the NEPA process, DOE's refusal furthers the notion that this draft EA was rushed into print and the process is being fast-tracked to quell community mobilization against the project.

We feel that the draft Environmental Assessment, as written, is substantively and procedurally incomplete and potentially misleading. We hope that our comments will help in the preparation of a revised document that will better consider potential impacts from this proposed project. We do not believe that a Finding of No Significant Impact is appropriate based on this existing draft Environmental Assessment.

Our Kaibab Band of Paiute Indians continues to have, and has had, an extensive, complex, and documented standing in the area of the proposed project. Not only have our ancestral people made the region

Tribal Affairs

HC 65 Box 2
Pipe Spring, Arizona 86022

Phone (928) 643-7245
Fax (928) 643-7260

Responses

Comment 56-01

As stated in the earlier response to comment number 20-01, DOE believes the scope of DOE's proposed action, the scope of Viresco's proposed project, as well as the magnitude of and level of uncertainty about the potential environmental impacts of the proposed project did not warrant a comment period of more than 30 days. DOE made this decision consistent with 10 CFR §1021.301(d). In addition, DOE has included responses to late comments on the Draft EA.

Comment 56-02

Comment noted.

Comment 56-03

Comment noted. DOE intends to continue consultation with the Kaibab Band to develop a plan for treatment of sites considered traditional cultural properties by the Kaibab.

56-01

56-02

56-03

Commenter 56 – Manuel Savala (continued)

**56-03
(cont'd)**

our home since the dawn of time according to our oral history, but our cultural remains have been scientifically tied to the archaeological sites listed as occurring at Jackson Flat.

In fact, we have found an irrefutable connection (details provided by the Tribe's Point of Contact in a conversation with Tribal Liaison Jesse Garcia on September 15, 2011) between the Viresco site and the human burials at Jackson Flat reservoir, serving to substantiate the region as a Sacred Site as we notified DOE in our scoping comments. We are currently investigating how to best handle this matter administratively in a way that protects confidentiality while notifying the proper authorities as we have the Department of Energy,

As we have always indicated, we want to protect our lands, resources, people and culture (including our ancestors) in perpetuity; no amount of mitigation can convince us that that will be the case with this proposal.

Our specific comments, questions, and concerns are as follows:

The NEPA process for this document was incomplete because all stakeholders were not identified, let alone included, in the process. The project as described in the EA is confined to a very small geopolitical area consisting of Kanab, Utah, and nearly always fails to consider the many, and varied, human or nature-based interests south of Utah, or any of the local governments and agencies whose jurisdictions were precluded merely by the political division of that state border, only about a quarter mile south. Although our Tribe was identified, analyses specific to our Tribe were virtually non-existent.

In fact, contrary to the assertion often made in the EA, the nearest home to the project (about a half mile) is actually located in Arizona. The Arizona Game & Fish appear not to have been contacted, nor the Arizona Strip Bureau of Land Management, nor the City of Fredonia whose citizens (like our's and in fact, many Tribal members live in Fredonia) are just as likely as those of Kanab to be impacted by this proposed project which admittedly will have emissions.

56-05

The draft EA often references the project site as "isolated" which is erroneous (it is within the city limits of Kanab, sandwiched between the communities of Kanab and Fredonia, just off of the only paved artery connecting them and the States for some distance, conveying

Responses

Comment 56-04

Section 1.4 in the DEA describes the methods that DOE used to conduct public outreach in preparation for the EA. Public Scoping Notices announcing the project and the public scoping meeting were sent to federal, state, and local agencies, Native American tribes, and members of the public. DOE sent consultation letters to the USFWS, the UDNR Division of Wildlife Resources, and UT SHPO. Representative letters are located in Appendix A. Staff-to-Staff consultation letters were sent to 16 Native American tribes in Utah and Arizona, including the Kaibab Paiute Tribal Council. Three tribes, the Kaibab Band of the Paiute Indians, the Hopi Tribe, and the Navajo Nation replied to the scoping letter. Letters were also sent to all of the U.S. Senators of Utah and Arizona, as well as the Utah and Arizona U.S. House of Representative members with the closest districts to the project site. Other federal agencies that were notified of the scoping process and the DEA were the U.S. Forest Service rangers of the Kaibab and Dixie National Forest, the Chief of the Environmental and Cultural Resources Management Division of the Bureau of Indian Affairs, the National Park Service, U.S. NEPA reviewers for the EPA Regions 8 and 9, Zion National Park, and the U.S. Geological Survey. DOE sent notifications to both Utah and Arizona governors, their respective Air Quality directors, the Utah Department of Natural Resources and the Arizona Department of Environmental Quality. DOE sent letters and copies of the DEA to the Kanab city manager and Fredonia mayor, the Kanab City Planning Commission, the Kane County Commission, the Kane County Land Use and Planning Commission, the Coconino County Manager, the Coconino County Department of Community Development, the Mohave County manager, and the Mohave County Development Services Department. Letters and copies of the DEA were also sent to the Arizona Board of Supervisors, and the BLM Kanab Field Office. DOE also contacted nongovernmental agencies such as the National Tribal Environmental Council and the Sierra club. DOE also placed electronic copies of the DEA on their website, and physical copies in the Kanab and Fredonia libraries.

The response to comment number 15-07 explains the oversights in the Draft EA regarding the proximity of the Pilot Plant to residential properties and corrections made to the Final EA, including a new figure showing nearby buildings.

Comment 56-05

Section 1.1 of the EA states that the Pilot Plant would be located in Kanab, UT. Section 2.5.2 of the EA identifies the site as being approximately 2.5 miles south of the city center. Section 3.1.1 describes the closest facilities to the proposed site. As stated in response to comment number 15-07, the commenter correctly points out that the

Commenter 56 – Manuel Savala (continued)

**56-05
(cont'd)**

all tourist traffic in the region) and appears to be predicated upon the values of municipal development in the eastern U.S.

We brought the potential omission of Arizona concerns to DOE's attention in an email dated March 18 and DOE promised to address all of those additional agencies/people in response.

The Draft Environmental Assessment is insufficient because it fails to consider any alternatives other than a No Action Alternative. Anticipated future operations and alternative sites should be analyzed as connected actions, particularly as DOE's funding represents the majority of the investment for building the infrastructure that will allow future operations.

56-06

It is incumbent upon DOE to hold the project proponent accountable for providing a clear plan of reasonably foreseeable operations that can be analyzed in the assessment; the proponent has gone on record saying that he fully intends to take the pilot plant beyond initial conditions and he needs to be held accountable for any impacts resulting from those operations in this document.

Correspondingly, many of the concerns identified by our Tribe can be traced to its location within a Sacred Site and its proximity to our Reservation. A location in Delta, Utah, for instance, should be studied for an alternative that may well be viable.

56-07

The Draft Environmental Assessment is remiss in making any analysis for most of the substantive concerns we identified in our scoping comments.

Although our Tribe's lists of species of concern appear in the draft EA and the statement is made on page 25, that "no impacts would be anticipated to species of cultural significance from either construction or operations, including those plants and animals of concern to the Kaibab Band of the Paiute", there has been no consultation regarding the significance of any species between the Tribe and DOE. Clearly, several of these species exist at the site and will be affected by the project's construction. This is an entirely unsubstantiated conclusion and we object to its usage in this document.

56-08

Section 3.2.2, Environmental Consequences of the Proposed Project, does not even mention our Reservation (or its proximity), let alone provide any analysis of its consequences.

Responses

Comment 56-05(continued)

Draft EA did not consider the proximity of residences in Fredonia. In fact, a number of residences across the state line in Arizona are within 1 mile of the proposed Pilot Plant site; however, because of a topographic ridge along the state border south of the plant site, the Pilot Plant would not be visible from these residences. Also, a residential farm property off US 89A in Utah west of the Pilot Plant site was inadvertently overlooked in the Draft EA. In response, a new Figure 3-5 has been added to the Final EA showing the locations of buildings in closest proximity to the proposed Pilot Plant. The Final EA has been corrected throughout to describe these distances appropriately: The closest residence in Utah is located off US 89A approximately 0.6 mile directly west of the site. A few residences in Arizona east of US 89A are just outside the half mile radius with the closest being approximately 0.55 mile southwest of the proposed Pilot Plant.

Comment 56-06

The subject of this comment has been addressed in the response to comment number 8-01. As stated in that response and in the Draft EA, the range of reasonable alternatives for DOE's consideration is the project as proposed by Viresco, any alternatives still under consideration by Viresco or that are reasonable within the confines of the project as proposed, and a no action alternative.

Reasonably foreseeable future operations are addressed as a connected action in the Draft EA.

Comment 56-07

Section 2.9.4 Vegetation and Wildlife has been moved to Chapter 3 as a resource considered in detail. More specifically it has been added as Section 3.11, which provides a thorough analysis of potential impacts to vegetation and wildlife including analyzing the potential for the presence of and impacts to plants and animals of cultural importance to Kaibab at the project site.

Comment 56-08

DOE has revised Section 2.5.2 and 3.1.1 of the Final EA to describe the proximity of the Kaibab Band of Paiute Indians Reservation adjacent to the Utah border in northern Arizona. A more thorough analysis of impacts to biological resources has been added in Section 3.11 of the Final EA, including the potential for the presence of plants and animals of cultural importance to the Kaibab at the project site; human health impacts are discussed in Section 3.9; a new Section 3.12 has been added to the Final EA to address surface water impacts; groundwater impacts are addressed in Section 3.6; and air quality impacts are discussed in Section 3.5. As discussed in response to comment number 56-05, a number of residences across the state line in Arizona are within

Commenter 56 – Manuel Savala (continued)

In addition, there is a complete failure of DOE in the document to perform any analyses specific to our Reservation (for example, economic analysis) which is quite different than the City of Kanab.

56-09

Our staff actually initiated contact with Elaine Everitt at DOE on December 15, 2010, indicating that our Reservation was in close proximity to the project site and wanting to be included in the entire project (although DOE did not appear before Tribal Council for half a year, until May of 2011).

3.4 Cultural impacts

Although the draft EA purports to analyze cultural impacts, it actually only considers impacts to archeological artifacts. Nevertheless, concerning archeological impacts:

56-10

- We disagree with the conclusion that adequate controls are in place to prevent desecration of human burials (in part because of the information provided in conversation to DOE's Tribal Liaison on September 15th). The three test trenches at the site were dug to a depth of 6.5 feet, which clearly indicates there is sufficient substrate for ancestral burials, let alone considering that shallow burials in the immediate area have been found and that the region lies within a Sacred Site. We insist that Tribal monitors be employed by the project proponent anytime construction is "moving dirt" and that our protocol for inadvertent discoveries is followed.

56-11

- As a connected action, DOE must insure that the 3-phase 12.5 kV power, and water lines (if not already in place) for the proposed action be surveyed for impacts to cultural resources. That does not appear to have been performed.

56-12

- DOE's plan for handling inadvertent discoveries made during construction is not satisfactory for this project; we reserve the right to substitute our comprehensive protocol which will help all parties to document and protect discoveries in a respectful manner.

56-13

As we have noted in every interaction with DOE, our concerns go beyond archeological artifacts, to our living culture and protection of our people and resources. In fact, DOE's Indian policy recognizes Tribal governments as sovereign entities with primary authority and

Responses**Comment 56-08 (continued)**

1 mile of the proposed Pilot Plant site; however, because of a topographic ridge along the state border south of the plant site, the Pilot Plant would not be visible from these residences or downtown Fredonia. Nor would the Pilot Plant be visible to most of the Reservation. Based on the size of the proposed Pilot Plant, the EA determined that impacts on environmental resources would be minor to moderate in the vicinity of the site.

Comment 56-09

DOE believes that the environmental justice analysis in Sections 3.10.1, 3.10.1.4, 3.10.2.4 and 4.2.11 adequately determined that the proposed Pilot Plant would not have disproportionately high and adverse impacts to the economy of the Kaibab Paiute Reservation. The extent of DOE's consultation efforts with the Kaibab and other Native American tribes were described in the Draft EA and updated in the Final EA.

Comment 56-10

DOE requested the tribe's protocol for review but has yet to receive the information. Therefore, DOE plans to follow its previously outlined plan as presented in the Final EA in Section 3.4.2, Environmental Consequences of the Proposed Project, addressing inadvertent cultural discoveries, which includes a procedure for treatment of human burials and remains. DOE intends to continue consultation with the Kaibab on this matter. The response to comment number 34-07 addresses the subject of tribal monitors.

Comment 56-11

As stated in response to comment number 36-04, the text in Section 3.8.2 of the Final EA has been revised based on further clarification by Garkane Energy of the "improvements" indicated in its will-serve letter of August 8, 2011 (EA Appendix C). The necessary improvements would consist of the installation of connection wiring between an existing power transmission line on Old Landfill Road adjacent to the proposed Pilot Plant site and the site proper. This connection wiring would cross Old Landfill Road and not require any new easements or rights-of-way to be acquired or disturbed.

Comment 56-12

The subject of this comment has been addressed in the responses to comment numbers 34-07 and 56-10. DOE intends to continue consultation with the Kaibab on this matter.

Comment 56-13

DOE is committed to maintaining and enhancing its relationship with Indian Tribal Nations and values their involvement in its NEPA process. DOE also recognizes the importance of its trust responsibilities to protect tribal sovereignty and native American culture. DOE believes a Social Impact Assessment is adequately covered in the EA under Sections

Commenter 56 – Manuel Savala (continued)

responsibility for the protection of the health, safety and welfare of their citizens, plus the right of each Indian nation to protect its natural and cultural resources. We are engaged in trying to do exactly that and would like DOE to support us in achieving it.

From our scoping comments:

**56-13
(cont'd)**

"...we request that DOE prepare a Social Impact Assessment to include the relationship of our people with that environment and the project's cultural and social effects"

- No Social Impact Assessment was prepared or even mentioned

As one of our Tribal members expressed in Tribal Council, our people collect plants and animals for traditional usage. There is also an underlying issue for the many other biological concerns (and cultural concerns because all things that impact the Kanab Creek watershed have great importance to our Tribe) as a part of the greater integrity of the natural surroundings. We asked for evaluation of impacts to wildlife, air & water quality, riparian ecosystems and human health (hereinafter referred to as parameters) in many of our comments but it was usually missing. We need to know:

"What is the source and composition of each feedstock?"

56-14

- Defining lignocellulosic biomass as agricultural residues, energy crops, wood residues and municipal paper waste is too broad to be useful. We need to know something akin to "juniper wood from the Kaibab" or "tires".

"We ask for a complete analysis of the liquids, where and in what quantity will they be obtained, any changes (chemical, electrical, thermal) that will occur...and how these releases can affect [the other parameters]"

56-15

- Some of these things were addressed but not adequately. For instance, if water catchments or reservoirs are actually planned in the foreseeable future – which remains unclear and must be addressed, how will they be contained or covered to prevent any wildlife from drinking from them (birds or even small animals that can negotiate fencing)? And, once again, even long-term impacts to water quality (ground or surface) are very important for us to know.

Responses

Comment 56-13 (continued)

3.10.1, 3.10.1.4, 3.10.2.4 and 4.2.11, which did not identify any disproportionately high and adverse impacts to the Kaibab's cultural or social resources.

Sections 3.11 and 3.12 have been added to the Final EA to analyze the impacts on biological resources and surface water in more detail. Section 3.11 addresses the potential impacts on plants and animals of cultural importance to the Kaibab at the project site; human health impacts are discussed in Section 3.9; and air quality impacts are discussed in Section 3.5.

Comment 56-14

The subject of this comment has been addressed in the response to comment number 6-09. Section 3.7.1 of the Final EA has been revised to include the following, "The biomass feedstock would likely be woody waste provided to the Pilot Plant by a supplier located in Southern Utah."

Comment 56-15

Sections 2.7.1 and 2.8 of the EA have been updated to clarify water use and wastewater generation of the Pilot Plant. Total process wastewater discharge under the proposed action and connected action would consist of approximately 850 gpd and 930 gpd, respectively, from plant processes. Under the proposed action, this process wastewater would be directed to a storage container for potential reuse, depending on wastewater characteristics. Viresco would test the water composition of the stored process wastewater to determine the feasibility of recycling. If the stored process wastewater can be reused, the treated process wastewater would be recycled back into the plant processes. If recycling of the wastewater is not possible, then a licensed contractor would transport, treat, and dispose of the process wastewater offsite per state regulations.

In addition to either recycling or offsite disposal, Viresco would also consider the following options under the connected action: construction of an evaporation pond to collect part or all of the process wastewater for recycling; or discharge to the Kanab City sanitary sewer system if the water can be treated to meet the state and federal standards governing such disposal. Although water characterization of the plant effluent is unknown at this time, Viresco would work with the City of Kanab and the state to ensure that the process wastewater would be treated and managed to standards as specified by state and federal regulations prior to storage in the evaporation pond or discharge into the City's sewer system. The evaporation pond would be lined with an HDPE liner to minimize any potential leaking to subsurface resources (see Section 3.6.2). See also response to comment number 52-07, which discusses potential impacts to groundwater. Wastewater management plans,

Commenter 56 – Manuel Savala (continued)

56-16	<p>We requested a study of odor and noise impacts associated with all of the processes.</p> <ul style="list-style-type: none"> • Very little analysis covered these for all of the parameters that we need to know.
56-17	<p>Identification of all compounds used for, released or generated and the impacts on the ecosystem was insufficiently addressed.</p> <ul style="list-style-type: none"> • In an early meeting, the Utah Division of Air Quality made it clear that this project would exceed its <i>de minimis</i> classification as soon as it went beyond the 30 day operation phase, which is fully planned by the proponent. It is critical that proposed project emissions also be provided for those increased operations.
56-18	<ul style="list-style-type: none"> • It should also be noted in the Environmental Assessment that the U.S. Environmental Protection Agency is currently studying flyash for characterization as a hazardous material, particularly from common components such as arsenic and selenium, bio-accumulated through groundwater contamination.
56-19	<ul style="list-style-type: none"> • Referencing concern a Tribal member vocalized as a private citizen during the Draft EA public hearing in Kanab regarding disposal of Viresco's flyash in the unlined Kane County landfill, State representative Mike Noel stated during the most recent Kane County Water Conservancy District meeting that a 5-50 year per foot transmissivity rate renders the practice innocuous. However, it obviously indicates Tribal concern is vindicated because it is just a matter of time until those elements affect Jackson Flat and then Kanab Creek! our Reservation and its cultural concerns must be protected in perpetuity. Please address this for our Tribe's future.
56-20	<p>We asked for a model of all health and economic impacts resulting from weather inversions and plume blight, plus their effects on the other parameters.</p> <ul style="list-style-type: none"> • Plume blight, weather inversions, and windroses were never addressed. • Extrapolating from areas (such as the counties of Washington and San Juan) with extremely different topography, elevation

Responses

Comment 56-15 (continued)

including the design of an evaporation pond, would be finalized after Viresco monitors the facility's initial 30-day run cycle and refines any operating parameters.

DOE consulted with Utah DEQ and DNR and determined that there are no state water quality standards that would trigger a requirement for installation of animal exclusion devices to eliminate hazards to wildlife. Likewise there are no local ordinances that require such devices. No such exclusionary devices are currently in use on the Kanab wastewater lagoons, and DOE is unaware of any such exclusionary devices being used on other existing impoundments or storm water detention basins in Kanab. However, Viresco has agreed to monitor the water quality to confirm that such impacts would not occur and to include exclusionary devices if the monitoring results indicate that potential impacts to wildlife may occur. DOE will require that Viresco develop the monitoring plan as part of the Mitigation Action Plan for this project. DOE will consult with the Utah DEQ and DNR, the U.S. Fish & Wildlife Service and Native American tribes regarding the parameters to be monitored and the levels that would trigger the installation of exclusionary devices, prior to approving the monitoring plan.

Comment 56-16

DOE maintains that the EA adequately described the potential impacts of the Pilot Plant from odor and noise, respectively, in Sections 3.5.2 and 3.9.2, and determined that the impacts would not be significant.

Comment 56-17

The subject of this comment has been addressed in the response to comment number 51-23.

Comment 56-18

Comment noted. The response to comment number 15-09 addresses the disposal of solid wastes from the proposed Pilot Plant.

Comment 56-19

The subject of this comment has been addressed in the response to comment number 15-09. The Kane County Landfill would be used for disposal of solid wastes from the proposed Pilot Plant only if the wastes are not characterized as hazardous using an EPA-approved testing protocol.

Comment 56-20

The response to comment number 21-02 addresses wind direction in the Kanab area based on the wind rose for Cedar City, UT. As described in response to comment 13-01, DOE has updated Section 3.5 of the Final EA to provide additional information about air quality and Pilot Plant emissions.

Commenter 56 – Manuel Savala (continued)56-20
(cont'd)

and wind patterns is not sufficient to make the assumptions that DOE claims and DOE admits that data from CO, NO₂, SO₂ and PM₁₀, let alone PM_{2.5} are not available at all.

56-21

- How would the carbon monoxide produced affect the surrounding region (including recreationists on Jackson Flat and inmates at the Jail), particularly under inversions that are common in winter? Coal grinders, plus the generation of hydrogen and carbon monoxide have a clear potential to present additional concerns to our Tribe.

56-22

We requested preparation of adequate emergency response plans generated to handle all foreseeable emergencies.

- Kanab Fire Department is justifiably proud of their firemen, but it is our understanding that it is largely a volunteer squad and the other departments listed under a mutual aid agreement are located so far distant that their response time once mobilized would probably render their aid moot. This requires further study. Oddly, volunteer Fredonia's Fire Department was not listed.

Resources not Considered in Detail**2.9.3 Surface Water**

Surface water analyses should not be released from detailed consideration based on the arguments made in the EA.

56-23

Although the EA indicates "there are no catalogued lakes or reservoirs in the drainage basin" according to the citation provided from 2007, the Jackson Flat Reservoir mentioned in other parts of the document will be completed by the time a decision is reached on this project. It needs to be studied for impacts from the proposed action, as well, particularly as it is literally across the street and may well be compromised in many ways, including mercury emissions that will become methylmercury, a hazard to the health of all consumers from the Reservoir which will be stocked. Other than an outdated citation, there is no rational basis provided for the statement that "no impacts to surface waters would be expected" and it is a reasonably foreseeable development.

Responses**Comment 56-21**

The subject of this comment has been addressed in the response to comment number 13-01.

Comment 56-22

The subject of this comment has been addressed in the response to comment number 43-07. DOE revised Section 3.9.1 in the Final EA to include the Fredonia Fire Department.

Comment 56-23

The subject of surface water has been added as Section 3.12 in the Final EA with expanded discussion on the potential impacts to this resource. As explained in response to comment number 15-16, Jackson Flat is not yet a water body that has been catalogued by the state; however, potential cumulative impacts to this reservoir are discussed in Section 4.2. The responses to comment numbers 18-02 and 40-10 address dispersion and deposition of air pollutants.

Commenter 56 – Manuel Savala (continued)

56-24

We also feel that Kanab Creek should not have been dropped from consideration merely because of its TDS impairment. The entire length of Kanab Creek holds great spiritual and abiding cultural importance for our tribe. Our elders have specifically noted that the purity of Kanab Creek water and its ecosystem, as a whole, are vital to the continuing cultural identity of the Kaibab Band. In fact, the Kanab Creek watershed is a specific area our Tribal Council declared as a sacred site under Executive Order 13007 by Resolution of our governing body in July of this year.

56-25

Section 2.9.4 Vegetation & Wildlife

Because of the lack of any analysis on potential effects on vegetation and wildlife in Arizona as referenced earlier, and in particular those of concern to our Tribe in any location, we believe that the rationale used to drop Vegetation and Wildlife resources from further consideration is deficient.

56-26

3.10.2.4. Environmental Justice

Based on the most recent census data, our reservation community is a minority and low-income population.

The topic of environmental justice (in particular, for our Kaibab Paiute community) was dismissed without adequate discussion. Although it was recognized elsewhere that our Reservation is located less than 2 miles distant from the proposed project, the environmental justice portion of the response failed to address our concerns.

One of the EPA priority areas for environmental justice concerns is reducing exposure to airborne toxics, which is a consideration with this project. The DOE must fully explore environmental justice for our Reservation, keeping in mind that our human population is compromised by high altitude.

56-27

In closing, meaningful environmental analysis must occur on a broader scale to be considered defensible.

Please note that we incorporate by reference all comments submitted by the Taxpayer Association and Kanab Cares. For all of these reasons above, we believe that a full Environmental Impact Statement should be prepared for this project which will scientifically determine whether there is no significant impact from the proposed project.

Responses**Comment 56-24**

DOE examined the proposed project's proximity to the Kanab Creek Watershed in the Draft EA in Sections 2.9.3, 3.4.2 and 4.2.4, and believes that the combination of the project's small footprint during construction and operation, coupled with the required measures for erosion control and pollution prevention, would not result in adverse impacts to water quality or cultural values within the watershed. The TDS impairment to Kanab Creek did not preclude its evaluation for potential impacts as this was covered in Section 2.9.3. The Final EA includes an expanded discussion of Surface Water in new Section 3.12 of Chapter 3. DOE also believes that due to the small scale of the proposed project it would not cause a disproportionately high and adverse spiritual or cultural impact to the Kanab Creek ecosystem or the traditional lands used by the Kaibab Band of the Paiute Tribe.

Comment 56-25

The response to comment number 56-07 addresses updates to the Final EA for consideration of Biological Resources in a new Section 3.11.

Comment 56-26

Because DOE concluded in the Draft EA that the proposed Pilot Plant would not have significant adverse impacts on air quality, water quality, or public health, Section 3.10.2.4 concluded that the proposed project would not have disproportionately high and adverse effects on minority and low-income populations, which includes the Kaibab Paiute Reservation community.

Comment 56-27

The response to comment number 12-01 addresses the subject of an EIS. DOE intends to continue its consultation with the Kaibab, including any suggested mitigation actions.

Responses

Commenter 56 – Manuel Savala (continued)

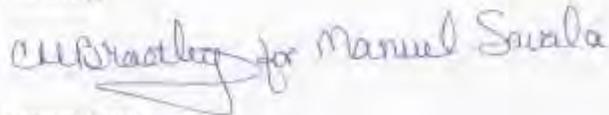
56-27
(cont'd)

We recommend that this FONSI not be signed until there has been adequate analysis of these Tribal, Arizona and regional issues, and when the results of those analyses can be added to the FONSI.

We stand ready to help: we have a comprehensive list of actions to provide DOE for the Mitigation Action Plan to help protect environmental and cultural concerns that we have regarding this project.

We look forward to a more comprehensive document once all comments have been evaluated and incorporated. As mentioned, we have a firm standing in this proposal, and wish to continue to be apprised on all NEPA proceedings.

Sincerely,

Handwritten signature of Manuel Savala in blue ink, written over a light blue horizontal line.

Manuel Savala
Chairman
Kaibab Band of Paiute Indians

Commenter 57 – Roger Hoverman

Joseph Zambelli - My Comments on DOE/EA-1870D

From: "Roger Hoverman" <higgbe@hotmail.com>
To: "Joseph Zambelli" <joseph.zambelli@netl.doe.gov>
Date: 9/16/2011 2:17 PM
Subject: My Comments on DOE/EA-1870D
Attachments: MyComments08302011.docx

Mr. Joseph Zambelli, NEPA Document Manager
U.S. DOE - National Energy Technology Laboratory
3610 Collins Ferry Road
P.O. Box 880
Morgantown, WV 26507-0880

Dear Mr. Zambelli:

Attached are our comments on the draft EA noted in the subject line.

I had difficulty developing them during the 30-day time frame. I have more to say, but no time is remaining in the comment period. I am sure others, not as well versed in science and NEPA as I am, have had an even more difficult time than I have had. Therefore, please consider this and the amount of controversy and extent the comment period to October 7th, 2011.

As I mentioned there is a great amount of controversy over this proposed project in our little community. I note that DOE has not specifically addressed the concerns we presented in our Scoping comments of 06/17/2011. Therefore, I request DOE very seriously consider completing NEPA for this project at the EIS level and hopefully a more robust disclosure and analysis of effects than the draft EA contains.

I am requesting a hard copy of any future documents (Final EA/FONSI or FEIS and ROD).

Respectfully,

Roger Hoverman and Andrea Bornemeier
686 West Aspen Dr.
Kanab, UT 84741

57-01.

Responses

Comment 57-01

The subjects of this comment have been addressed in the responses to comment numbers 12-01 and 20-01.

Commenter 57 – Roger Hoverman (continued)

Roger Hoverman, 686 West Aspen Dr., Kanab, UT 87471

September 4, 2011

Comment on Draft EA for Utah Coal and Biomass Fueled Pilot Plant (DOE/EA-1870)

1.0 PURPOSE AND NEED:

The Purpose and Need to pursue this type of research nationally, is agreed.

However, the need to site this plant, specifically, in Kanab is not demonstrated.

From a strictly business perspective, the Kanab location is an advantageous lease arrangement for Mr. Guthrie with Utah SITLA at the expense of degrading the quality of life for the rest of us. This is not right. One person or company should not gain by taking from the community at-large without creating an off-setting, local benefit.

The Congressional earmark does not specify Kanab, Utah. Where in Conference Report 111-278 is this information located? Why is the document not included in an Appendix as supporting information? Please include it in an Appendix and please be sure the document printing is readable.

The proponent and thereby DOE has not provided any substantive rationale for selection of the proposed site. This leaves the Purpose and Need section of the EA deficient. NEPA requires full disclosure of the purpose and need for appropriate consideration of the proposed action.

2.0 ALTERNATIVES:

Why wasn't an alternative location analyzed? The Congressional earmark language only specifies the State of Utah. I do not accept DOE's rationale in Section 2.3: Alternatives, stipulating the Proposed Action and the No Action constitute a "reasonable range of alternatives" as required by NEPA and CEQ regulations. How can DOE reasonably assess the economic efficiencies of the project, without comparison of costs and benefits of the Proposed Action with that of an alternative location? Location is the issue.

Responses

Comment 57-02

The subject of this comment has been addressed in the response to comment number 8-01. The Fiscal Year 2010 Appropriations Act (Public Law 111-85) and the Conference Report (111-278) accompanying the Act are public documents referenced in the Final EA and are available on the Internet at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_reports&docid=f:hr278.111.pdf

Comment 57-03

The subject of this comment has been addressed in the response to comment number 8-01.

Commenter 57 – Roger Hoverman (continued)

Roger Hoverman, 686 West Aspen Dr., Kanab, UT 87471

September 4, 2011

- 57-04** Please investigate and disclose the economic costs and benefits to the public, were the proposed plant to be sited in (or near) an already existing industrial complex (eg. Saint George or Cedar City) as compared to locating the plant in Kanab. I believe this is necessary to provide a fair assessment of what Kanab would have to give up (or loose) in terms of changes in perception of quality of life, aesthetics, western charm of our small tourist town verses building the plant in an already existing industrial complex.
- If you would like, I volunteer to assist (boots-on-the-ground) in gathering information to develop such an alternative, even if just for comparison purposes.
- DOE's responsibility under NEPA (section 1.3 in the EA) is to assess impacts. Without a reasonable effort to construct a comparison of the Kanab site with another, no valid assessment of socio-economic impacts is possible. Evaluation without comparison does not adequately disclose benefit/costs and other social impacts of the Proposed Action and can only result in qualitative speculation.
- Table 2.7-3, page 22:
- 57-05** Please check the figures for Feed (process) water and process waste water as it appears 930 gpd of water are made during 30 days of operation.
- Second, if the majority of the waste water exists as steam, how can water "in" equal water "out"?
- Third, by calculation 567 lbs per day of fines waste would be collected for 30 operation days. How much, escapes capture during the same operation day?
- 57-06** Fourth, units for carbon monoxide figure are missing, for the 30 operation days column. Please indentify.
- 57-07** 2.7.3 Products and Waste Generated: "Process gases from the hydrogasifier would be sent to the flare hot, and no condensation of process water is expected during normal operation."
- What is the import of this statement? Would condensation likely occur during start-up and/or shut-down. What would emissions be during these phases of operation?

Responses**Comment 57-04**

The subjects of this comment have been addressed in the response to comment numbers 8-01 (siting), 21-03 (tourism), and 26-10 (property values).

Comment 57-05

The amounts of process wastewater and steam that would be generated under the proposed action and connected action have been updated in Tables 2.7-1 and 2.7-3, respectively. Please note that Table 2.7-3 in the Draft EA is Table 2.8-3 in the Final EA. As shown in Figure 2-4, syngas combustion in the flare and chemical reactions in the gasifier and regenerator result in water creation, which then exits these systems as steam. Therefore, the water in would not necessarily be similar to the amount of water exiting the Pilot Plant.

As shown in Table 2.7-1, 1,168 lbs per day of ash would be generated (approximately 17 tons total over the 30-day period) and the remaining 600 lbs per day of generated waste would include fines and sand (approximately 9 tons total over the 30-day period). The ash and fines would be removed from the process continuously using cyclone separators to separate them from the process gases and the sand and would be collected, analyzed, and disposed of in an appropriate landfill per state and federal regulations. It is anticipated that very minimal amounts of ash and fines would escape the facility during operations. Viresco would use appropriate ash handling methods, such as keeping the ash wet or encapsulating the ash with a cover, to prevent coal ash from blowing offsite.

Comment 57-06

Table 2.7-3 has been updated in the Final EA to include the units for carbon monoxide (tons). Please note that Table 2.7-3 in the Draft EA is Table 2.8-3 in the Final EA.

Comment 57-07

The process gasses from the hydrogasifier would be combusted in the flare. Emissions from the flare are specifically addressed in the Section 3.5.2.

Commenter 57 – Roger Hoverman (continued)

Roger Hoverman, 686 West Aspen Dr., Kanab, UT 87471

September 4, 2011

2.7.5 Decommissioning

“The Pilot Plant would be decommissioned and the site restored no later than the end of the site lease period.”

57--08

What does decommissioned mean exactly? Would all the structural components of the plant be dismantled and removed from the site. I talked with Lou Brown (SITLA) on Monday (09/12/2011) and he indicated SITLA could negotiate with Viresco to procure structures of value to them at the end of the lease. This doesn't sound like decommissioning to me.

The site lease period for the proposed Surface Use Lease Agreement (SULA) is 30 years. Has DOE seen a copy of the terms and conditions? How would Kanab residents be assured decommissioning would actually happen? Decommissioning should occur when plant operation ceases and not be dependent on waiting until the lease term expires. What document specifies that decommission would occur and when? An uncompleted, unsigned and undated lease agreement administered by a quasi-state agency is not sufficient for analysis of environmental impacts relative to environmental justice issues and others, especially as the Terms and Conditions have not been disclosed.

57-09

The EA discusses conditions and potential impacts of plant operation out to 30 operation-days and out to 130 operation-days per year (at some point in the future) as a connected action. Is it reasonable to base expectations on what might happen 30 years out in the Decommission instance and not for other impacts in other resource arenas? Please be consistent.

57-10

3.0 EXISTING CONDITIONS AND ENVIRONMENTAL CONSEQUENCES

Throughout portions of the Environmental Consequences section of the EA, little to no supporting information is provided to demonstrate an analysis occurred. Evaluative statements are made without making a direct (or disclosure, if indirect) connection with the analysis performed and at what scale.

Please bolster the analysis of environmental consequences sections with clear language of what was analyzed, whether the impacts are beneficial, adverse or no effect; define the time frame in the analysis (short-term or long-term) and the

Responses

Comment 57-08

As stated in response to comment number 24-03, Section 2.7.5 was revised in the Final EA to include a discussion of specific decommissioning activities that would occur.

Comment 57-09

The subject of this comment has been addressed in the response to comment number 6-01, which states that DOE believes the analysis covering potential environmental impacts for the currently proposed additional operational period of 130 days adequately addresses the connected action in the Final EA under Section 2.8 with discussions of respective environmental resources in Chapter 3. The discussion of site restoration in Section 2.7.5 has been expanded in the Final EA to explain Viresco's responsibilities at the end of the lease.

Comment 57-10

DOE maintains that the descriptions of potential impacts in this EA are appropriate for an action of the size and scope of the proposed Pilot Plant as consistent with comparable DOE NEPA documents. Where appropriate, qualifiers have been added to the analyses for resources in Chapter 3 to distinguish between short-term and long-term effects. As explained in response to comment number 6-12, DOE has added definitions for impacts to Section 3.0 of the Final EA described as beneficial, negligible, minor, moderate, and substantial.

Commenter 57 – Roger Hoverman (continued)

Roger Hoverman, 686 West Aspen Dr., Kanab, UT 87471

September 4, 2011

- 57-10 (cont'd)** | scale(s) of the analysis or comparison. Please be as consistent as possible in application of the last, contextual parameter.
- 57-11** | 3.2.1 Aesthetics: Existing Condition
The EA addresses distance to nearest residential area. Was the Arizona side of the line assessed as well? Please disclose this.
- 57-12** | 3.6.2 Groundwater: Environmental Consequences of the Proposed Plant
Please correct any math errors in capacity percentages.
- 57-13** | 3.7.2 Materials and Waste: Environmental Consequences of the Proposed Plant
Feed Stocks are not adequately disclosed nor analyzed. Would animal waste be used? Would sewage sludge be used? Would vehicle tires be used? Please disclose and analyze effects, especially regarding noxious orders from the stack emissions, on-site storage of these materials and transport of these material to the site. Please use both the 30 and 130 operation-day criteria in the analysis.
- 57-14** | 3.10 Socio-economics:
DOE demonstrated a preconceived notion leading to a Finding of No Significant Impact instead of being unbiased, fair and balanced in evaluation of effects. This is illustrated in the verbage used on page 54, 4th paragraph. "Process water from the Pilot Plant will be recycled. process wastewater will have no impact to the City of Kanab's wastewater system." [Emphasis is mine.] Use of the verb will indicates DOE had already decided to proceed with the Proposed Action. NEPA case law exists which establishes this as imprudent and not in the public interest.
- 57-15** | DOE's rigid stance that the Proposed Action and the No Action constitute a reasonable range of alternatives directly results in a FONSI conclusion in the draft EA. How could it not? By default, the No Action alternative would not satisfy the Purpose and Need, so what is left? This is exactly the reason another alternative should be analyzed, even if just for comparison purposes.
- 57-16** | Should the subsequent analysis result in a finding of a significant impact to Kanab residents, the proponent can still propose to construct the plant in a suitable

Responses

Comment 57-11

The subject of this comment has been addressed in the response to comment numbers 15-07 and 56-05.

Comment 57-12

The process water needs for the 30-day proposed action and 130-day connected action has been updated in the Final EA. Under the 30-day condition, the plant would need 3,290 gpd, while under the 130-day connected action, 4,130 gpd of groundwater would be required. This would be 0.07 percent and 0.08 percent of the daily Kanab municipal well capacity, and 0.13 percent and 0.16 percent of the Kanab daily use, respectively.

Comment 57-13

The subject of this comment has been addressed in the response to comment number 6-09. Woody waste would not include animal wastes, sewage sludge, or used tires.

Comment 57-14

The subject of this comment has been addressed in the response to comment number 24-04. The verb tense has been changed in the Final EA.

Comment 57-15

The subject of this comment has been addressed in the response to comment number 8-01. The determination of a FONSI is not based on whether the no action alternative would satisfy the purpose and need for agency action.

Comment 57-16

Comment noted.

Commenter 57 – Roger Hoverman (continued)

Roger Hoverman, 686 West Aspen Dr., Kanab, UT 87471

September 4, 2011

**57-16
(cont'd)**

alternative location and DOE is still able to fund the project according to the Congressional legislation.

3.10.2.2 Environmental Consequences of the Proposed Plant: Taxes and Revenue

57-17

See second paragraph. During operation, what taxes would be paid and to whom as this project would be located on SITLA land and aside from the annual rental fee remitted to the state, I am not aware of what taxes would apply to the plant. Please illuminate.

3.10.2.3 Environmental Consequences of the Proposed Plant: Economy and Employment

See third paragraph, last sentence. "... and have not detracted from regional tourism." What information supports this statement? Please illuminate.

57-18

See fourth paragraph, last sentence. "Protected public lands draw people employed in such higher wage services....." Agreed, but I believe the reference is used out of context in that this occurs mainly if the quality of life in the given community is not degraded, or perceived as being so. I view this plant as a potentially smelly, smoke stack industry which represents the spectre of things to come. Many Kanab residents, some of them business owners, have declared they would not have chosen Kanab as their location if they had known a coal-gasification plant would be located in Kanab. Many of these are retirees, part of the group mentioned earlier in the paragraph as contributing the greatest source of real income growth in the western states since 1970. The case for beneficial impacts is premature as the analysis is too superficial. Please analyze this very important impact area in more depth.

I find no clear, summary statement regarding effects on economy and employment. Please provide one.

CUMULATIVE IMPACTS:

Responses

Comment 57-17

Because the project would be a private enterprise (not owned by DOE) on property leased by SITLA, it would be subject to commercial and property tax assessments as confirmed by the Kane County Treasurer.

Comment 57-18

The subject of this comment has been addressed in the response to comment numbers 21-03 (tourism) and 26-10 (property values). The Draft EA considered the aesthetic qualities of Kanab, and the qualitative effects of the proposed Pilot Plant on the local viewshed. "Aesthetics" is not a resource that readily lends itself to quantitative impacts, particularly when considering visibility of structures by individuals. Some individuals would consider the visibility of manmade features to be more of an impact on their aesthetic appreciation of a vista than others would. In this context, the Draft EA considered the aesthetic qualities of Kanab, and the qualitative effects of the proposed Pilot Plant on the local viewshed. Figure 3-6 has been revised in the Final EA (now Figure 3-7) to show approximately how large the Pilot Plant would appear from the same vantage point in comparison to the visibility of nearby manmade features. As conceptually depicted in Figure 2-3 of the EA, the Pilot Plant would be a relatively modest commercial-industrial facility occupying an acre and a half. Except for the exhaust flare structure and associated scaffolding, the facility would be comparable to other commercial-industrial facilities located along US 89A and elsewhere in Kanab and Fredonia. DOE has added additional information about tourism in Section 3.10 of the Final EA.

Commenter 57 – Roger Hoverman (continued)

Roger Hoverman, 686 West Aspen Dr., Kanab, UT 87471

September 4, 2011

- 4.2.1 Land Use: “Construction and operation of the proposed project in combination with the Kane County Public Safety Facility **could** adversely impact uses of recreational areas associated with the Jackson Flat Water Supply Storage Project.” [Emphasis is mine.] This is not an analytical statement and is not sufficient to adequately disclose potential impact(s). Please analyze potential impacts to recreationists using Jackson Flats Reservoir. Please include effects on the many area residents who mountain bike, hike and walk pets on the state lands in the vicinity of the proposed plant location.
- 57-19** Note: At the Kane County Water Conservancy District meeting last week (Thursday, Sept 8th), Mike Noel, President, reported Jackson Flat Reservoir would be completed by October 31, 2011; full-pool capacity fill (water) would be achieved within 1 to 2 years. This is within the short-term time frame of this EA. I can have official minutes forwarded to DOE upon request and availability from KCWCD. Additionally, with an email to the KanabCares and Kane County Taxpayers Association email strings, I can determine many people who frequently utilize the SITLA parcels to hike, enjoy the sunsets/views, bike ride and/or exercise pets and possibly provide their phone numbers in order that DOE may verify my reporting.
- 4.2.2 Aesthetics: “Construction and operation of the proposed project in combination with the Kane County Public Safety Facility **could** adversely impact views from the recreational areas associated with the Jackson Flat Water Supply Storage Project and, to a lesser extent, residences to the northwest of the Pilot Plant site.” [Emphasis is mine.] This is not an analytical statement and does not adequately disclose potential impact(s). Also see note above.
- 57-20**
- 4.2.4 Cultural Resources: “If any human remains are discovered, then such a discovery **could** be viewed as a cumulative impact of the projects.” I ask you when would disturbance of a burial not be considered an impact, cumulative or otherwise? This is not an analytical statement and not sufficient to adequately disclose potential impact(s).
- 57-21**
- 4.2.4 Cultural Resources: “The discovery of prehistoric human remains at an archaeological site investigated during the course of the Jackson Flat Water Supply Storage project, however, has heightened concerns among the Kaibab Band of Paiute Indians that human remains may be encountered during construction for the present project.” What does the consulting archeologist and SHPO have to say

Responses

Comment 57-19

The subject of this comment has been addressed in the response to comment number 24-05.

Comment 57-20

The subject of this comment has been addressed in the response to comment number 24-06.

Comment 57-21

The subject of this comment has been addressed in the response to comment number 24-07.

Commenter 57 – Roger Hoverman (continued)

Roger Hoverman, 686 West Aspen Dr., Kanab, UT 87471

September 4, 2011

- 57-21 (cont'd)** | on the likelihood of discovering human remains if excavation for this project were to occur? Please disclose.
- 57-22** | 4.2.6 Greenhouse Gases (GHG) and Climate Change. This section is a very succinct, interesting overview of a complex arena of concern. Well done.
- 57-23** | 5.2 Irreversible or Irrecoverable Commitment of Resources:
 “Water resources used by the Pilot Plant would be treated and recycled in the process for reuse under the DOE cooperative agreement for 30 days of operation or possibly returned to the environment through an evaporation pond under future operations.”
 Facility Processes and Equipment (Section 2.7.2.) makes no mention of an evaporation pond; no evaporation pond is discernable in Figure 2-3. Please explain what is meant by “returned to the environment”. Would this effluent truly be left to evaporate in a pond?
- 57-24** | Temporal Analysis of effects is inadequate:
 DOE’s intention is to only be involved with this project out to the 30 operation-day mark, as per a cooperative agreement with the proponent. However, DOE is fully aware the proponent intends to achieve a 130 operation-day mark and DOE acknowledges this in EA section 2.8: Consideration of Connected Actions. Please correct this inconsistency in temporal scale of the analysis for all resource areas of concern. NEPA requires disclosure of effects at both the short and long terms.
 Nowhere in the EA have I discovered a projection (time frame) of how many years the plant would likely be operated to achieve the 130 operation-day mark or even the 30 operation-day mark. Therefore this environmental assessment is deficient in making full disclosure of what actions are intended as required by NEPA and its implementing CEQ regulations. Please correct this deficiency.

Responses

Comment 57-22

Comment noted.

Comment 57-23

The subject of this comment has been addressed in the response to comment number 39-04.

Comment 57-24

The subject of this comment has been addressed in the response to comment number 6-01.

Commenter 58 – Robert Hubbard

September 10, 2011

Mr. Joseph Zambelli
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
M/S: B07
P.O. Box 880
Morgantown, WV 26507-0880

Dear Joe,

I appreciate the second public meeting recently held in Kanab. As you know, many of the community members continue to have serious concerns about the operation of the proposed plant. The DOE's Proposed Action must be modified to incorporate certain clarifications.

It is my understanding that the EA is not normally the place to discuss the details of monitoring the plant construction and operation; however, there a number of action items that have been included in the EA with no indication of how and when they will be performed and who will perform them. To have included them in the EA implies that their omission would have had a negative environmental impact on the facility's construction and operation and hence call the findings of the total EA into question.

58-01

The items on page 4 are taken directly from the EA and represent some of the Quality Assurance and Inspection items that need to be accomplished prior to or during the project in order to know that the work will be performed in accordance with the specifications. It is important to know who will prepare and approve the written action items, when the actions will be done, who will do them, who will analyze the results, what the acceptance criteria will be and determine what, if any, corrective action will be taken.

A written Quality Assurance Program should be prepared and accepted by all parties prior to the start of construction. The Program will establish the parameters of the inspection program. There must be written confirmation of all the activities.

Many of the questions being raised, including those in this letter, are the result of the very unusual contracting procedures involved on this project.

58-02

Normally projects of this type are contracted through a competitive bidding process. In this case the normal process of bidding with detailed specifications and associated drawings was completely bypassed. As a result very little information has been available to review for

Responses

Comment 58-01

Under the NEPA regulations, specific "mitigation" is appropriate and usually required to reduce adverse impacts to a level below "significant" in the context of NEPA. Additionally, numerous regulations, building codes, and standards specify best management practices and other measures to be implemented for the purposes of reducing adverse impacts whether "significant" under NEPA or not. As stated in response to comment number 15-04, Viresco would be required to operate the facility in compliance with all applicable federal, state, and local laws, regulations, and ordinances as would be the case for all comparable commercial and industrial facilities. Respective regulations would require the maintenance of data and may require the submission of reports to demonstrate compliance, and the Pilot Plant would be subject to inspection by state regulators. As stated in response to comment 15-06, Viresco would also be subject to the terms of the lease with SITLA, which specifies reclamation requirements, and with the cooperative agreement with DOE. Otherwise, to the extent that this EA has identified potential impacts that should be mitigated, DOE will address them in a Mitigation Action Plan.

Comment 58-02

The subjects of this comment have been addressed in the responses to comment numbers 8-01, 15-04, 15-06, and 58-01. The NEPA review process is intended to provide quantitative and qualitative information about potential impacts to be used by a federal agency in the decision making process for proposed actions. Once a project is complete and the resulting facilities are constructed and become operational, the oversight for compliance with environmental regulations rightfully falls within the jurisdiction of regulatory agencies.

Commenter 58 – Robert Hubbard (continued)

potential impacts on the community. Even to this day only a proposed site plan has been made available to Kanab City.

In this case the project funding was first made available and then the contract to proceed was awarded to an organization that had developed a process through laboratory testing. The applicant then found a location to build the facility.

**58-02
(cont'd)**

In reviewing the EA it became apparent that awarding the contract in this manner resulted in a lack of overall control (both environmental and operational) over the project. The DOE has stated that they have no regulatory authority over the project or its operation. The City of Kanab will only enforce the correct City Ordinances and associated Codes. The State of Utah has only monitoring activity. The only remaining option is to allow the applicant to self police themselves. **This is unacceptable since public safety and potential hazardous waste are involved.**

The solution must be to have an independent, objective engineering company become involved and assist in assuring that all technical issues are adequately addressed.

Another major concern is the control of the many feedstocks that are proposed to be tested in the facility. The EA does not address the ash residue as one of the major sources of hazardous waste. According to the EA report there could be 34,000 pounds of ash generated in a 30 day test. How can anyone say that there will be no harmful material produced when the ash is a result of processing such feedstock as industrial waste, hospital waste, plastic, trash, refinery tars, sewerage sludge, tires, municipal waste, and refinery waste? All of these waste products are mentioned in the applicant's advertising as well as industry literature.

58-03

No mention is made of the documentation of the chemical content of the feedstock material prior to the start of testing to see if the project equipment has been properly prepared to successfully handle the material and the expected residue.

Some forms of feedstock can be delivered to the plant in a powdered form as fine as face powder which would be almost uncontrollable if released to the atmosphere. This would be particularly harmful to the 4,000 residents of Kanab who live downwind from the plant. It needs to be determined who will verify that the handling and disposal of the feedstock residue is done correctly with a minimum of spillage.

At some point prior to the delivery of the feedstock the City of Kanab must have veto power over which feedstock material will be allowed on City property.

Responses

Comment 58-03

The subjects of this comment have been addressed in the responses to comment numbers 6-09 and 15-09.

Commenter 58 – Robert Hubbard (continued)

58-04

Although the described quality control and assurance methods may seem excessive for a pilot plant they could also serve as a strong quality foundation for an anticipated mid-size demonstration plant testing facility.

As you can see the EA failed or inadequately addressed the safe operation of the proposed plant. The final EA needs to include a site-specific monitoring plan before any approvals are given.

Sincerely,



Robert Hubbard

1027 Hillside Drive

Kanab, Utah 84741

bkhillside@expressweb.com

Responses

Comment 58-04

The subject of this comment has been addressed in the response to comment numbers 58-01 and 58-02.

Commenter 58 – Robert Hubbard (continued)

Attachment A - Inspection and Quality Assurance items required by the EA

Page 12 Obtain and enforce the NPDES permit

Perform the entire item identified with bullets

Page 18

Verify methods in handling ash etc

Page 24

Preparing and implementing SPCC and SWPPP

58-05

Page 32

Prepare documentation to verify intended compliance with City Codes

Page 51

Specify in writing how plant will meet State and Federal requirements covering special and hazardous waste

Page 57

Verify in writing a Pre-Start-Up Review has been successfully completed and the results have been verified by the City of Kanab.

Produce a written Procedure which covers the reporting and cleanup any spill at the facility including notification all necessary federal, state and local official s.

Responses

Comment 58-05

For construction of the Pilot Plant Viresco would file for authorization via UDEQ's construction General Permit to obtain stormwater management coverage and would adhere to NPDES regulations as required under this permit. The forms and information necessary to obtain coverage under that permit can be found at the UDEQ, Division of Water Quality website <http://www.waterquality.utah.gov/UPDES/stormwatercon.htm>.

For the SWPPP, a national model has been prepared for use by those preparing a storm water pollution prevention plan. The UDEQ, Division of Water Quality website listed above contains the recommended SWPPP model template to ensure that a plan is prepared in compliance with the state permit. Links to the SWPPP template and the template guidelines are available at the website provided above.

The proposed Pilot Plant will adhere to all City of Kanab applicable codes. Discussions of such compliance are discussed in Sections 3.1 Land Use, 3.2 Aesthetics, and 3.9 Public Health and Safety

State and federal requirements covering hazardous waste are discussed in Section 3.7 Materials and Waste.

As stated in Section 3.9.2 Viresco would perform a Pre-Start-up Safety Review prior to construction and start-up of the facility to ensure the safest possible design and operations. This action would not take place until after DOE's final decision on the proposed action.

During construction and once operational, Viresco would maintain a SPCC Plan developed under federal and state regulations for avoidance, minimization, and response to pollutant spills that could occur. The plan would include items such as the confirmation that Viresco's operations manual meets applicable regulations; description of Viresco's maintenance and inspection program relative to spill prevention and control; provisions to keep maintenance and inspection records current; procedures to contain and recover oil or hazardous substances spilled during onsite transfers; and training procedures for personnel regarding spill prevention and control.

Commenter 59 – Charlie Neumann and Susan Hand

Joseph Zambelli - Comments on the Utah Coal- and Biomass-Fueled Pilot Project

From: "Susan Hand" <oasis@kanab.net>
To: <joseph.zambelli@netl.doe.gov>
Date: 9/19/2011 11:15 AM
Subject: Comments on the Utah Coal- and Biomass-Fueled Pilot Project

59-01

While we appreciate the opportunity to review and comment on the draft Environmental Assessment for Utah Coal and Biomass Fueled Pilot Plant (DOE/EA-1870D), we must say we strongly disagree with many of the outcomes and the summary of "no significant environmental effects." We understand that the EA has been a substantial undertaking and that much thought and work has been invested; still, the EA overlooks or inadequately addresses several legitimate concerns that have been raised in regards to the proposed project.

59-02

First and foremost, we thank you for the flexibility of the few extra days granted to the public to make comment. Having reviewed the EA, we urge you to further extend the comment period an additional 30 days to allow citizens the necessary time to review and analyze the contents of its 78 pages and research their responses. While the DOE can assign staff to develop the EA, we citizens must wedge this project in around our day jobs. The EA acknowledges that there has been considerable local interest, and we implore the DOE to honor the eagerness of the public to participate in this process: Please provide an extended time frame for public involvement.

59-03

Secondly, we insist that the controversial nature of the project at hand, and that the scale of potential impact to our small community, clearly warrants a full Environmental Impact Statement. I urge you to follow through on this recommendation, which would ensure an opportunity to explore alternative locations to site the plant and thus mitigate its adverse effects.

59-04

We would remind you that important concerns about the legitimacy of the political arrangements associated with this project have been raised, further fueling the controversy. Many citizens express concerns that our local government failed to allow adequate public involvement in the decision-making process; we hope that our interests won't be taken so lightly at the federal level. An EIS is truly in order.

59-05

1.0 PURPOSE AND NEED
 We have to wonder, if this coal-gasification technology is so promising, why isn't the coal industry, rather than we taxpayers, paying for this project? But even if we assume that the purpose and need are valid, there is nothing that requires that the pilot plant be sited in Kanab. The benefits to our community are miniscule, while the risks have generated profound concerns among citizens. Meanwhile, no evidence is presented in the EA that locating the site in our town, or even in proximity, is necessary or advantageous to the project.

Responses

Comment 59-01

Comment noted.

Comment 59-02

The request for an extension of the comment period was addressed in response to comment number 20-01.

Comment 59-03

The subject of this comment to prepare an EIS has been addressed in the responses to comment numbers 12-01 and 51-03.

Comment 59-04

The subject of this comment to prepare an EIS has been addressed in the responses to comment numbers 12-01 and 51-03.

Comment 59-05

The subject of this comment has been addressed in the response to comment number 8-01.

Commenter 59 – Charlie Neumann and Susan Hand (continued)

- 59-06** 2.2 PROPOSED ACTION
Although the statement is made that "Viresco has no plans to commercialize the proposed Pilot Plant at the Kanab site in the future," a company representative has contradicted this notion, having stated publicly that a production facility is a real consideration. The DOE should further explore this potential.
- 59-07** 2.3 ALTERNATIVES
The NEPA process is intended "to identify and assess the reasonable alternative to proposed actions that would avoid or minimize adverse effects of these actions upon the quality of the human environment." Thus, we remind you of the imperative to consider a "reasonable range of alternatives." The DOE is remiss in limiting its attention to only the Proposed Action and the No Action alternatives. We strongly disagree with the rationale that the DOE's decision subject to NEPA be limited by the nature of the proponent's proposal. This is counter to the purpose of NEPA.
- 59-08** 2.73 PRODUCTS AND WASTE GENERATED
We all know that coal ash, even in small quantities, is a toxic material. We've been able to identify six "appropriate" landfills in Utah. Utah's media headlines indicate this a big deal, that disposal facilities are severely limited and closely scrutinized. We think it appropriate for the DOE to identify a more specific destination of this waste product. In particular, could it be stored in our Kane County landfill or otherwise be disposed of in this region?
- 59-09** 2.75 DECOMMISSIONING
Do the terms of the negotiated but unsigned lease specify removal of all structural components at the site upon decommissioning? Are we to assume that the terms of the unsigned lease will necessarily be binding somehow, or is there a risk that different terms could be arranged before signatures are in place?
- 59-10** 2.8 CONSIDERATION OF CONNECTED ACTIONS
The EA states, "... excess process water could be discharged to the city sewer system or removed by commercial services for appropriate disposal." Again, we wonder, what and where constitutes "appropriate" when we're discussing a toxic waste product? Are storage facilities and re-use of the process water not adequate at the increased (130-day) level of operation? On page 54, fourth paragraph, the EA states: "Process water for the Pilot Plant will be recycled..." process wastewater will have no impact to the City of Kanab's wastewater system." This is a preconceived notion that appears to be biased and it falls short of exploring the range of impacts.
- 59-11** 2.92 TRANSPORTATION AND TRAFFIC
There seems to be a mathematical conflict between the scheduled coal and other deliveries described and the number of annual truck visits stated here. If the plant were operating at 130 days, as Viresco has suggested, the truck visits just for coal delivery would be more than 17 per year. It would seem the number 14 presented here has not fully accounted for potential transportation impacts, which should also include other material deliveries and waste product (e.g. process water and coal ash)

Responses**Comment 59-06**

The subject of this comment has been addressed in the response to comment number 15-15. Successful demonstration of the economic feasibility of the steam hydrogasification process by the Pilot Plant could result in future commercialization of the technology. The timing and location of any commercial-scale facility using this technology is speculative and not reasonably foreseeable.

Comment 59-07

The subject of this comment has been addressed in the response to comment number 8-01.

Comment 59-08

The subject of this comment has been addressed in the response to comment number 15-09.

Comment 59-09

The subject of this comment has been addressed in the responses to comment numbers 15-06, 24-03, and 35-06.

Comment 59-10

The subject of this comment has been addressed in the responses to comment numbers 9-01, 15-05, 39-04, and 56-15.

Comment 59-11

As shown in Table 2.7-3 in the Draft EA, Viresco estimates that approximately 650 tons of coal would be consumed over 130 days of operation, which would result in approximately 33 truck deliveries. Please note that Table 2.7-3 in the Draft EA is Table 2.8-3 in the Final EA. As noted in the response to comment number 15-12, Section 2.9.2 has been updated to provide projected traffic volumes resulting from the transport of construction equipment and materials and the materials and waste during operation.

Commenter 59 – Charlie Neumann and Susan Hand (continued)

removal.

3.2 AESTHETICS

The EA does not adequately address the aesthetic impact to drivers and passengers traveling on highway 89A south of Kanab. The plant and its stacks would be located immediately adjacent to the highway, and would be clearly visible. This is of considerable importance since passengers traveling north at highway speed, will, a few short moments later, find themselves passing through Kanab's business district and downtown, and are likely to associate the visual impact of their entry with our town.

3.10.2.3 ECONOMY AND EMPLOYMENT

This EA inappropriately minimizes impacts to tourism, suggesting that the recreational attractions (parks and monuments) that draw people to the region are distant to the plant, so that tourists would still visit them. As business owners in Kanab, we assure you that *our community stands little or nothing to gain when tourists visit these attractions unless they stop and spend within our community* (see 3.2). It is a severe and unacceptable deficiency to tout the positive impacts of the proposed plant while disregarding the negative ones.

Furthermore, your interpretation of the 2004 Sonoran Institute report appears to be biased. More current economic studies are available. Here is an update to what the Sonoran Institute has to say, (excerpted from the "Prosperity" report, January 2009):

"Research shows that the West's economy is driven by people's decision about where they want to live, a rapid rise in retirement and investment income, and the increased attractiveness of communities surrounded by protected public lands."

"In the past decade, a widening body of research has shown that amenities, such as environmental quality, a slower pace of life, low crime rates, scenery, recreational opportunities – *quality of life, for short* – are influencing people's decision to live and do business in rural areas" [italics mine].

The EA should explore these aspects in terms of the plant making our town potentially less attractive. The plant would represent a visual blight within our town, and perceived threats—to health, quality of life, and the local economy—could deter those who might otherwise be inclined to rent or purchase real estate in the area, or open new businesses, for example.

As for jobs in the service sector, please review the recent report, *Grand-Staircase Escalante National Monument: Economic Performance in the Surrounding Communities*, from Headwaters Economics, which shows that between 1996 and 2008:

- Services in this region grew from 3,627 to 5,741 jobs, a 59% increase
- Real personal income grew by 40%.
- Non-labor income grew by 27%.

While we agree that a diverse economy and new jobs are important, these figures

Responses

Comment 59-12

The subject of this comment has been addressed in the response to comment number 45-02. The Pilot Plant would be located approximately one half mile east of US 89A, not immediately adjacent to the highway; but it would be visible to travelers along the route. As conceptually depicted in Figure 2-3, the Pilot Plant would be a relatively modest commercial-industrial facility occupying an acre and a half. Except for the exhaust flare structure and associated scaffolding, the facility would be comparable to other commercial-industrial facilities located along US 89A and elsewhere in Fredonia and Kanab.

Comment 59-13

The subject of this comment has been addressed in the responses to comment numbers 21-03 and 57-18.

Commenter 59 – Charlie Neumann and Susan Hand (continued)**59-13
(cont'd)**

suggest that our existing economy is enjoying relatively good traction, with much more than the "relatively low-wage occupations such as those found in restaurants and hotels" described in this EA. We should be certain that as we diversify our economy, we don't develop in a direction that would be incompatible with our already healthy framework.

(During the public scoping, Susan Hand submitted in an email message, dated 6/15/2011, "Since our community's and region's primary economy is based on travel and tourism, it seems of paramount importance to assess how the plant would impact our existing economic base.")

Finally, the EA does not clarify whether the nine permanent positions suggested would be part-time or full-time. This is of particular interest since the plant will not operate on a full-time basis. Might these employees live in the area only part time, in fact?

59-14**4.0 CUMULATIVE IMPACTS**

4.2.1 Land Use: Potential impacts of the plant to the recreational merit of the Jackson Flat reservoir are not adequately analyzed or disclosed. Note the importance of recreational opportunities as an attractive amenity (3.10.2.3) in regards to economic development.

59-15

4.2.2 Aesthetics: Potential impacts of the plant to the views from the recreational area of Jackson Flat reservoir are not adequately analyzed or disclosed.

59-16

4.2.4 Cultural Resources: We believe that when a burial is disturbed, it is always a significant impact. The statement referring to such impacts is not analytical and does not adequately disclose the potential for such impacts, cumulative or otherwise.

Given the prolific number of human remains disturbed by excavation of the Jackson Flat reservoir, as well as the intense interest in this matter expressed by the Paiute tribe, the DOE should investigate and report on the opinions of the consulting archaeologist and SHPO regarding the likelihood of discovering human remains if excavation for this plant project were to occur.

59-17

4.2.1.1 Socioeconomics and Environmental Justice: Given the aesthetic impacts for the highway 89A corridor, (per 2.3, above), travelers and tourists may be inclined to stop for services and goods beyond—rather than in—Kanab. This potential negative impact to our business community appears to be entirely ignored by the DOE, but could have significant short-term and long term effects on the existing tour and travel-based economy of our small town, and thus on our residents. Furthermore, there is no analysis of impacts to property values and associated tax revenues, possible decline in Travel and Recreation Taxes, the City's resort tax, and employment and income taxes if the plant were to result in a net decline in tourism-related revenues for our town. This oversight needs to be corrected.

59-18**5.2 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES**

Here I find the first mention that "Water resources used by the Pilot Plant would be

Responses**Comment 59-14**

The subject of this comment has been addressed in the responses to comment numbers 13-02 and 15-17.

Comment 59-15

The subject of this comment has been addressed in the responses to comment numbers 13-02 and 24-06.

Comment 59-16

The subject of this comment has been addressed in the response to comment number 24-07.

Comment 59-17

The subject of this comment has been addressed in the responses to comment numbers 59-12, 21-03, and 36-06.

Comment 59-18

The subject of this comment has been addressed in the responses to comment numbers 24-08 and 51-25.

Commenter 59 – Charlie Neumann and Susan Hand (continued)

**59-18
(cont')**

treated and recycled in the process for reuse under the DOE cooperative agreement for 30 days of operation or possibly returned to the environment through an evaporation pond under future operations." What, exactly, does "returned to the environment" mean—are you suggesting that the effluent would be left in a pond to evaporate, onsite? If so, why is this feature not described or visually represented elsewhere in the report?

59-19

In an overall assessment of the EA, the DOE's temporal analysis of effects should not be limited by the 30-operation-day-per-year mark, as per a cooperative agreement with the proponent. We have all been made aware that the proponent seeks to achieve 130 operation-days, as acknowledged in section 28: Consideration of Connected Actions.

Furthermore, the EA does doesn't provide any specific time frame in terms of how far into the future the plant is likely to be operated. This does not allow for full disclosure of what actions are intended, as required by NEPA.

We appreciate your consideration of our comments.

Sincerely,
Charlie Neumann and Susan Hand
Owners-Managers
Willow Canyon Outdoor Co.
263 South 100 East
Kanab, Utah 84741
435.644.8884

Responses

Comment 59-19

The subject of this comment has been addressed in the responses to comment numbers 6-01, 34-04, and 51-06.

Commenter 60 – Bill Corcoran and Kristin Henry (Sierra Club)



September 16, 2011

Via Electronic Mail

Joseph Zambelli
NEPA Document Manager
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road, P.O. Box 880
Morgantown, W.V. 26507-0880
joseph.zambelli@netl.doe.gov

Darryl Shockley
Project Manager
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road, P.O. Box 880
Morgantown, WV 26507-0880
darryl.shockley@netl.doe.gov

Re: Sierra Club Comments on Draft Environmental Assessment for Viresco Coal and Biomass Fueled Project DOE/EA-1870D

Dear Mr. Zambelli and Mr. Shockley:

On behalf of Sierra Club, we are writing to provide you with comments on the draft environmental assessment ("Draft EA") that the United States Department of Energy ("DOE") prepared for the proposed Viresco Coal and Biomass Fueled Project ("Viresco Project" or "Project") in Kanab, Utah. The Sierra Club is the oldest conservation organization in the United States, with over one million members, friends and supporters, including over 3,500 members in Utah. We appreciate the opportunity to participate in this process and request that you provide us with notice, sent to the undersigned, regarding all further action in this matter.

The Viresco Project is intended to convert coal and biomass into a synthetic gas (syngas) and ultimately into a clean fuel that can power vehicles. Liquid coal, or

Responses

Commenter 60 – Bill Corcoran and Kristin Henry (continued)

coal that has been converted to liquid fuel, is being promoted as a “cure-all” to our nation’s energy problems. Liquid coal, however, is plagued with economic and environmental downsides from the time the coal is mined until long after the liquid is burned. Beyond the conventional pollution associated with coal, liquid coal also releases almost double the global warming emissions per gallon as regular gasoline.¹ In addition to being a global warming disaster, the liquid coal proponents want the government to funnel billions in subsidies and tax breaks to artificially create an entirely new industry. At a time when we need to be reducing our carbon emissions, liquid coal represents perhaps the dirtiest, most expensive, and most dangerous energy gamble we could take. Fortunately, there are real solutions like efficiency and renewables that can lead us to a cleaner, healthier energy future. At a minimum the federal government must analyze these alternatives before funneling millions of dollars to another coal-to-liquid plant.

I. **Introduction**

The National Environmental Policy Act (“NEPA”) is our “basic national charter for the protection of the environment.” 40 C.F.R. § 1500.1. 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. To accomplish these purposes, NEPA requires all agencies of the federal government to prepare a “detailed statement” that discusses the environmental impacts of, and reasonable alternatives to, all “major Federal actions significantly affecting the quality of the human environment.” 42 U.S.C. § 4332(2)(C). This statement is commonly known as an environmental impact statement (“EIS”). See 40 C.F.R. Part 1502.

The agency may decide to begin the environmental review process with the preparation of an environmental assessment. 40 C.F.R. §§ 1501.3, 1501.4(a) – (c). An environmental assessment is a “concise public document” which “briefly provide[s] sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact (‘FONSI’).” 40 C.F.R. § 1508.9. The purpose of the environmental assessment is to determine whether the federal action is “significant” enough to require an impact statement. Even if the project may have significant environmental effects, the agency may adopt mitigation measures that substantially or totally eliminate those effects.

The environmental assessment must contain a discussion of the purpose and need for the proposed action, alternatives to the proposal, the environmental

¹ U.S. EPA, “Greenhouse Gas Impacts of Expanded Renewable and Alternative Fuels Use,” April 2007 and Williams, Robert et al. above.

Responses

Commenter 60 – Bill Corcoran and Kristin Henry (continued)

impacts of the proposal and the alternatives, and a listing of agencies and persons consulted during the assessment period. 40 C.F.R. § 1508.9.

The regulations implementing NEPA identify several factors that, when present, indicate that the environmental effects of a proposed action are significant. These include unique characteristics of the geographic area such as proximity to historic or cultural resources, the degree to which the proposed action affects public health or safety, and cumulatively significant impacts. 40 C.F.R. §§ 1508.27(b)(2), (b)(3), (b)(7).

Although the regulations do not specifically address how an agency should determine the scope of an EA, agencies usually look to regulatory provisions addressing how to determine the scope of an EIS; the EA forms the basis for determining whether an EIS is or is not necessary, and therefore must be similar in scope to the potential EIS. *Citizens' Comm. To Save Our Canyons v. U.S. Forest Serv.*, 297 F.3d 1012, 1028, n. 13 (10th Cir. 2002).

For the reasons stated below, the Draft EA is legally and technically flawed because it failed to analyze a connected action, arbitrarily limited the purpose and need of the project, failed to consider viable alternatives in its analysis, and failed to adequately assess the direct impacts and cumulative impacts associated with this project. Accordingly, the Sierra Club requests that DOE conclude the Viresco Project will cause significant and irreparable environmental harm and reject the Project. Alternatively, we request that DOE fully and completely address the following deficiencies and concerns surrounding the Draft EA and complete an environmental impact statement for further public comment.

60-01

II. The DOE Has Illegally Piecemealed the Draft EA because the Combustion of the Coal and Biomass is a Connected Action.

The Viresco Project will convert coal and biomass into a slurry, which will then serve as the feedstock into a process to create syngas. Draft EA at 22, Table 2.7-3. In the Draft EA, the DOE has not accounted for and analyzed the environmental impacts associated with the combustion of the coal and biomass to create this feedstock. The DOE explains that “no coal or biomass would be directly combusted at the proposed facility.” See Draft EA at 2, 43. Bifurcating the feedstock preparation from the Project’s environmental impacts analysis represents an illegal piecemealing of the Project; the DOE has an obligation to consider the impacts associated with all connected actions.

60-02

Under NEPA, an agency may not divide a project into multiple “actions,” each of which individually has an insignificant environmental impact, but which collectively have a substantial impact. See 42 U.S.C. § 4332; 40 C.F.R. § 1508.25; see also *Wetlands Action Network v. U.S. Army Corps of Eng’rs*, 222 F.3d 1105,

Responses**Comment 60-01**

DOE prepared this EA to determine whether an EIS is required (see 40 CFR § 1501.4) as explained in response to comment number 12-01. The other subjects in this comment are addressed in response to the specific comments below.

Comment 60-02

The commenter misinterprets the statement in the EA that “no coal or biomass would be directly combusted at the proposed facility”, to mean that these feedstocks would be combusted elsewhere. The text has been revised in the Final EA to state: “The Pilot Plant would not combust coal or biomass directly. Instead, the feedstock (coal with or without biomass) would be gasified and the char produced from the gasification process would be combusted in the regeneration step.” DOE considers that the procurement of coal and biomass feedstocks for the operation of the proposed Pilot Plant would constitute routine commercial transactions, and the delivery of these feedstocks has been addressed in Sections 2.7.1 and 2.9.2 of the EA. As discussed in response to comment number 21-06, the Pilot Plant would not depend on the Alton Mine, or any other specific coal mine, as a source of supply, and the amount of coal purchased for use in the proposed Pilot Plant would be an insignificant portion of the total annual sales from that coal mine, or any other commercial supplier.

Commenter 60 – Bill Corcoran and Kristin Henry (continued)

1118 (9th Cir.2000). The Tenth Circuit has recognized that “One of the primary reasons for requiring an agency to evaluate ‘connected actions’ in a single EIS [or EA] is to prevent agencies from minimizing the potential environmental consequences of a proposed action (and thus short-circuiting NEPA review) by segmenting or isolating an individual action that, by itself, may not have a significant environmental impact.” *Citizens’ Comm. To Save Our Canyons*, 297 F.3d at 1028.

Courts apply an “independent utility” test to determine whether multiple actions are so connected as to mandate consideration in a single environmental review document. The crux of the test is whether “each of two projects would have taken place with or without the other and thus had ‘independent utility.’” *Wetlands Action Network*, 222 F.3d at 1118 (internal quotations and citation omitted); see also *Utahns for Better Transp. v. U.S. Dept of Transp.*, 305 F.3d 1152, 1183 (10th Cir.2002) (noting that this circuit applies the “independent utility” test). When one of the projects might reasonably have been completed without the existence of the other, the two projects have independent utility and are not “connected” for NEPA’s purposes. *Native Ecosystems Council v. Dombek*, 304 F.3d 886, 894 (9th Cir. 2002); *Wilderness Workshop v. U.S. Bureau of Land Mgmt.*, 531 F.3d 1220, 1229 (10th Cir. 2008) (the crux of the “independent utility” determination is “whether each of the two projects would have taken place with or without the other”).

The proposed combustion of coal and biomass project that will serve as feedstock for the Viresco Project fails the independent utility test. Without the coal and biomass combustion feedstock, the proposed Viresco Project could not operate as it is impossible to produce a synthetic gas without a feedstock. In addition, nobody would gasify coal and biomass into a feedstock without an end-user for that feedstock. This Project thus fails the independent utility test because it cannot reasonably be completed without the coal and biomass combustion. See, e.g., *Wetlands Action Network*, 222 F.3d at 1118; *Utahns for Better Transp.*, 305 F.3d at 1183; *Native Ecosystems Council*, 304 F.3d at 894. Thus, DOE must account for the environmental impacts associated with both Projects in its environmental analysis.

III. The Draft EA Fails to Reasonably Define Purpose and Need.

The definition of purpose and need in the Draft EA is critically important because it determines the range of “reasonable” alternatives that the agency should consider. An agency may not “define [a] project so narrowly that it forclose[s] a reasonable consideration of alternatives.” *Utah Envtl. Cong. V. Bosworth*, 439 F.3d 1184, 1195 (10th Cir. 2006). The Draft EA impermissibly defines the purpose too narrowly “to determine whether the [Viresco] project would cause significant adverse impacts to the environment.” Draft EA at 1. Likewise, the Draft EA’s expressed need – “to meet the requirements of the Congressional earmark in the

Responses

Comment 60-03

As stated in the response to comment number 8-01, DOE initiated a financial assistance award for Viresco’s Pilot Plant project to satisfy a Fiscal Year 2010 Congressional earmark by Senator Bennett for a “Coal and Biomass to Fuel Pilot Plant.” In accordance with the earmark, DOE and Viresco Energy, LLC signed a cooperative agreement (DE-FE0002945) that would provide \$2,404,000 using appropriations under the line item for Fossil Energy Research and Development in Public Law 111-85 and the referenced Energy and Water Conference Report 111-278.

DOE did not select this project under either a competitive or a non-competitive procurement and had no role in enacting this earmark. As the agency administering the financial assistance at the direction of Congress, DOE must comply with NEPA by assessing and considering the potential environmental impacts associated with the proposed project. DOE has no regulatory jurisdiction regarding the project. However, DOE may consider additional mitigation as a condition of its final NEPA decision.

NEPA requires that agencies evaluate reasonable alternatives to its proposed action. The purpose and need for agency action determines the range of reasonable alternatives. In this case, the purpose and need for DOE’s proposed action is to comply with the Congressional earmark. The earmark calls for DOE to grant financial assistance for the project as proposed. Given that Congress chose to distribute funding for this particular project, the range of reasonable alternatives for DOE’s consideration is the project as proposed by Viresco, any alternatives still under consideration by Viresco or that are reasonable within the confines of the project as proposed, and a no action alternative.

Viresco had already selected the technology for the project before the earmark was enacted. Viresco has not identified alternative sites, technologies or utilities other than those addressed in the EA. Alternatives still under consideration by Viresco or reasonably within the confines of the project as proposed have been evaluated in the EA, along with the no action alternative.

60-02 (cont’d)

60-03

E-169

Commenter 60 – Bill Corcoran and Kristin Henry (continued)

Responses

Fiscal Year 2010 Appropriations Act” by funding the Viresco Project – is an improperly narrow definition of need. *Id.* at 2.

Here, the Draft EA has arbitrarily constrained the alternatives analysis by narrowly defining the purpose and need to a particular project without assessing whether the agency could meet actual energy needs through other alternatives. For instance, if DOE had defined the purpose and need as “to find a way to power vehicles with a domestic energy supply” or “reduce the demand of vehicle fuel” than other alternatives would satisfy the purpose and need. The Draft EA’s purpose and need statement leave no room for the agency to consider any other reasonable alternatives.

DOE’s identified need has completely skewed to its decision, depriving itself, other parties, and ultimately United States taxpayers of a full assessment of options to meet need. There are a wide-range of alternatives that the agency could have considered had it stated a purpose and need that was not so limited that only one project could fulfill it. For instance, if the purpose and need was to develop or improve technologies to increase fuel efficiency or power vehicles there are a handful of other viable alternatives. National Energy Technology Laboratory issued a report on July 8, 2006 that listed several alternatives to coal-to-liquid projects, including increasing fuel efficiency standards, and using enhanced oil recovery to increase domestic production of oil.² In addition, the agency could consider improving hybrid vehicle or electric vehicle efficiency and technology.

DOE never considered these alternatives simply because they deviate from Viresco’s plans. This is a completely impermissible construction of “purpose and need” for the environmental assessment that taints the remainder of the Draft EA. *See Friends of Southeast’s Future v. Morrison*, 153 F.3d 1059, 1066 (9th Cir. 1998) (“An agency may not define 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,” because “the EIS would become a foreordained formality”) (quoting *Citizens Against Burlington, Inc. v. Buseff*, 938 F.2d 190, 196 (D.C. Cir. 1991), *cert. denied*, 502 U.S. 994 (1991)) (correction in original).

Even if the purpose and need were focused on utilizing coal to create a liquid fuel, such as demonstrate the conversion of coal-to-synthetic gas technology for widespread commercial use is assumed proper, DOE would have had other reasonable alternatives to consider. There are a number of different technologies that are attempting to convert coal to synthetic gas, such as Prenflo or Fischer Tropesch, and each of these technologies have different impacts on the environment. At a minimum the agency should have defined the purpose and need to at least

² NETL, “Economic Impacts of U.S. Liquid Fuel Mitigation Options,” July 8, 2006. DOE/NETL-2006-1237.

60-03
(cont’d)

E-170

Commenter 60 – Bill Corcoran and Kristin Henry (continued)

60-03
(cont'd)

capture these other reasonable technologies and compare the environmental impacts between them.

IV. The Range of Alternatives Considered is Unreasonable

The Draft EA fails to satisfy the basic function of NEPA: to inform the public and decision-makers of the environmental consequences of the proposed action. The discussion of alternatives is at the heart of this process, yet no meaningful alternatives are provided here by DOE. There must also be an adequate no-action alternative that provides the public with a meaningful no-action benchmark, and a thorough discussion of the effects of alternative technologies and plant designs.

60-04

The Sierra Club asks DOE to take into consideration the following viable and reasonable alternatives and their effects: meeting energy demands through conservation and efficiency programs such as investing in improving fuel efficiency standards, investing in improving hybrid and electric vehicle technology, alternative plant locations, and utilizing an air-cooled plant design. This is a non-exhaustive list of reasonable alternatives, yet none of which were considered by DOE in the EA process, making the Draft EA legally insufficient.

A. The Draft EA Fails to Satisfy the Basic Requirements and Function of NEPA Alternatives Analysis and Fails to Provide Essential Information to the Public.

NEPA requires an agency to consider "alternatives to the proposed action." 42 U.S.C. § 4332(2)(C)(iii); *see also* 42 U.S.C. § 4332(2)(E). The requirement that agencies consider alternatives is critical to NEPA's implementation. Indeed, the alternatives analysis section is the "heart of the environmental impact statement." 40 C.F.R. § 1502.14.

The Council on Environmental Quality's ("CEQ") regulations provide directives on the consideration of alternatives. *Morongo Band of Mission Indians v. Fed. Aviation Admin.*, 161 F.3d 569 (9th Cir. 1998). A CEQ regulation requires an agency to present the environmental impacts of the proposed action and its alternatives in a comparative form. 40 C.F.R. § 1502.14.

NEPA's regulations require an agency "to rigorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. § 1502.14. In its alternatives analysis, "[s]n agency must look at every reasonable alternative, with the range dictated by the nature and scope of the proposed action." *Northwest Environmental Defense Center v. Bonneville Power Admin.*, 117 F.3d 1520, 1538 (9th Cir. 1997) (quotations omitted). "The existence of a viable but unexamined alternative renders an environmental impact statement inadequate." *Morongo*, 161 F.3d at 575 (internal quotations and citations omitted).

Responses

Comment 60-04

The subject of this comment has been addressed in the response to comment number 8-01. Although the commenter suggests alternatives that would be available to DOE if the Department had jurisdiction or ownership of the project, DOE's proposed action is to provide financial assistance to a project identified in a Congressional earmark. Therefore, all of the alternatives suggested in this comment are not reasonable alternatives to DOE's proposed action that meet DOE's purpose and need. It should be noted that DOE conducts an extensive range of research, and funds a variety of projects addressing national goals for energy conservation and efficiency programs, renewable energy, and alternative technologies.

Commenter 60 – Bill Corcoran and Kristin Henry (continued)**Responses****Comment 60-05**

The subject of this comment has been addressed in the responses to comment numbers 60-03 and 60-04.

The main purpose of NEPA is to ensure that “high quality” “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). A “touchstone for [a court’s NEPA sufficiency] inquiry is whether an EIS’s selection and discussion of alternatives fosters informed decision-making and informed public participation.” *Westlands Water Dist. v. United States DOI*, 376 F.3d 853, 868 (9th Cir. 2004) (quoting *Calif. v. Block*, 690 F.2d 753, 767 (9th Cir. 1982)). The lack of a described alternative, here, deprives the public of the ability to participate in the decision-making process because of the lack of quality information.

“The purpose of the alternatives requirement is [also] to assure that the government agency as a decision-making body has considered methods of achieving the desired goal other than the proposed action.” *Piedmont Heights Civic Club, Inc. v. Moreland*, 637 F.2d 430, 436 (5th Cir. 1981) (quoting *Sierra Club v. Morton*, 510 F.2d 813, 815 (5th Cir. 1975)). “Consideration of other realistic possibilities for action forces an agency to consider the environmental effects of a project and evaluate those effects against the effects of alternatives.” *Id.*

The Draft EA wholly fails to provide any substantive environmental impact comparisons, largely because no alternative courses of action were considered. The public is, therefore, left with no basis of comparison on which to make informed decisions and participate in the decisionmaking process, which is the pinnacle purpose of NEPA. See *Friends of the Earth v. Coleman*, 513 F.2d 295, 298 (9th Cir. 1975) (“we . . . caution those charged with preparing impact statements against too heavy a reliance on a conclusory form of presentation, lest [NEPA’s] purpose of adequately informing the public of probable significant environmental impacts be undermined”). As such, the Draft EA is legally insufficient to properly inform the public and interested parties.

The Draft EA identified and considered only two alternatives: the Viresco Project and a no action alternative:

DOE’s Proposed Action is limited to providing financial assistance to Viresco in a cost-sharing arrangement to meet the requirements of a Congressional earmark in Fiscal Year 2010 Appropriation Act and its accompanying conference report. Therefore, DOE’s decision subject to NEPA is limited to either accepting or rejecting the project as proposed by the proponent and specified by Congress, including the proposed technology and selected site. DOE’s consideration of reasonable alternatives in this case is therefore limited to the Proposed Action and No Action Alternative.

Draft EA at 9.

60-05

E-172

Responses

Commenter 60 – Bill Corcoran and Kristin Henry (continued)

The Fiscal Year 2010 Appropriation Act, however, only states that \$36,850,000 "shall be used for projects specified in the table that appears under the heading 'Congressionally Directed Fossil Energy Projects' in the joint explanatory statement accompanying the conference report on this Act." The "Congressionally Directed Fossil Energy Projects" earmarks \$2,500,000 for a "Utah Coal and Biomass to Fuel Pilot Plant."

There is nothing in the Fiscal Year 2010 Appropriation Act or accompanying Conference Report that states the earmark must go to the proposed Viresco Project, nothing limiting what technology can receive this earmark, and nothing limiting where the project is sited. Therefore, DOE's decision to limit its analysis to the Viresco Project, including the proposed technology and selected site has no basis in the Appropriations Act. In addition, the Fiscal Year 2010 Appropriation Act did not limit DOE's liability under NEPA. Therefore, the agency must fully comply with NEPA, which requires the agency "to rigorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. § 1502.14.

B. The DOE Should Have Considered These Reasonable Alternatives.

DOE Failed to Consider Alternate Locations

NEPA requires federal agencies to consider reasonable and feasible alternatives to the proposed action. The Draft EA is flawed because it fails to consider any real and meaningful alternatives to the proposed action. The Draft EA only considers two alternatives, the Viresco Project and a no action alternative, because DOE claims that they are constrained by the Fiscal Year 2010 Appropriation Act. However, this is an agency imposed limitation that is not grounded in the law because neither the Act nor the Conference Report includes any information or restrictions regarding a specific location.

There are numerous problems with the proposed project site. First, the proposed site is nestled between numerous National Parks and other public lands. The proposed site is 30 miles away from Zion National Park, 45 miles away from the Grand Canyon National Park and Bryce Canyon National Park, 135 miles from Sycamore Canyon Wilderness, and 165 miles from Canyonlands National Park. Draft EA at 42.

Given the proximity to these treasured public lands, it is reasonable for the agency to consider other alternatives. As discussed in detail below, this Project (including the connected action) will probably have significant impacts associated with its air emissions, including impacts on visibility in the Class I area.

60-05
(cont'd)

E-173

Responses

Commenter 60 – Bill Corcoran and Kristin Henry (continued)

60-05
(cont'd)

In addition, this facility will generate 1,825 tons of coal ash a year if it is fully operating. Draft EA at 50. Viresco has not stated how it will dispose of this coal ash. If this coal ash is deposited on-site in an inadequate landfill or another sub-par landfill, it could lead to ground water contamination.³ Also, if the coal ash is improperly disposed of on-site it could release of the coal ash into the surrounding environment.⁴ Given the project site's proximity to such iconic public lands, this is a risk the agency should not take and should at least have evaluated alternative sites.

Second, the proposed site is located in an arid area that is already constrained by "over-allocated water resources." Draft EA at 24, 67. The Viresco Project intends to rely on an underground drinking water from the Coconino-De Chelly Aquifer to supply its 3,250 gallons of water daily. Draft EA at 48.

The Draft EA advances absolutely no reasons why only this particular project site was the only one considered. There appear no ties to this project site as the technology was developed in California and this is not a mine mouth project. Draft EA at 2, 15.

The conversion of coal to synthetic gas requires an excessive amount of water in relation to fuel created. More than 4 gallons of water are needed for every gallon of transportation fuel produced, threatening our limited water supplies.⁵ The potential for water shortages is even greater in the West where water is scarcer. Draft EA at 67. Given the water demands of this technology and the need to conserve potable water in the West, it is reasonable that the DOE should have considered alternative locations.

Finally, Native American remains were recently discovered approximately 0.25 mile north of the proposed Viresco Project site. The Kaibab Band of Paiute Indians have expressed serious concerns about the siting of the proposed Project because of potential destruction of tribal artifacts and human remains that may be located on the site. Draft EA at 8.

The project site, given the cultural resources, arid nature, and proximity to so many iconic public lands, has many drawbacks that counsel for consideration of an alternate location. Since Viresco hasn't even signed a lease for these lands yet, Draft EA at 11, there are no constraints for evaluating other locations.

³ Lisa Evans, et al., *State of Failure: How States Fail to Protect our Health and Drinking Water from Toxic Coal Ash* (Aug. 2011), available at <
<http://earthjustice.org/sites/default/files/StateofFailure.pdf>>.

⁴ Id.

⁵ U.S. Department of Energy, "Report to Congress on the Interdependency of Energy and Water," December 2006, page 60.

Commenter 60 – Bill Corcoran and Kristin Henry (continued)

DOE Failed to Consider Alternative Methods of Meeting Demand and Different Supply Technologies

NEPA requires federal agencies to consider reasonable and feasible alternatives to the proposed action. The Draft EA is flawed because it fails to consider any real and meaningful alternatives to the proposed action. Because DOE has created an unreasonable purpose and need for this proposed action, no reasonable alternative technology or alternate projects are discussed. If the alleged analysis of alternatives "consists entirely of foregone conclusions, rather than facts," the agency has failed to fulfill the minimal requirements of NEPA. *Town of Matthews v. U.S. DOT*, 527 F. Supp. 1055, 1058 (W.D.N.C. 1981).

60-06

There are a wide-range of alternatives that the agency could have considered had it not arbitrarily limited the scope of projects through the purpose and need section. These alternatives, as mentioned above, include increasing fuel efficiency standards, using enhanced oil recovery to increase domestic production of oil, and improving hybrid vehicle or electric vehicle efficiency and technology.⁶

It is especially important that the DOE consider the vehicle fuel efficiency alternative given the number of benefits National Energy Technology Laboratory has recognized associated with these projects:

The VFE [vehicle fuel efficiency] mitigation option modeled here will save substantial quantities of liquid fuels, will generate large requirements for the products and services of many industries, will create substantial numbers of jobs, and will generate significant federal, state, and local government tax revenues. The major impacts of the VFE option can be summarized as follows:

In year t_0+6 , the VFE option:

- Results in savings of 225,000 barrels of liquid fuels
- Generates \$100 billion in industry sales
- Creates over \$4 billion in industry profits
- Generates \$21 billion in federal tax revenues
- Generates \$11 billion in state and local tax revenues.
- Creates 500,000 jobs

In year t_0+20 , the VFE option:

- Results in savings of over 2 million barrels of liquid fuels
- Generates \$75 billion in industry sales

⁶ NETL, "Economic Impacts of U.S. Liquid Fuel Mitigation Options," July 8, 2006. DOE/NETL-2006-1237.

Responses

Comment 60-06

The subject of this comment has been addressed in the response to comment number 60-04.

Commenter 60 – Bill Corcoran and Kristin Henry (continued)

- Creates over \$3 billion in industry profits
- Generates \$15 billion in federal tax revenues⁷

Even if the purpose and need was focused on the conversion of coal-to-synthetic gas technology for widespread commercial use, there are a number of different technologies that the agency should have considered in its alternative analysis such as Prenflo or Fischer Tropsch.

**60-06
(cont'd)**

The DOE should compare the environmental impacts of each of the alternatives listed above with the Viresco Project and no action alternatives. 40 C.F.R. § 1502.14. (requires an agency to present the environmental impacts of the proposed action and its alternatives in a comparative form). Such a comparison is vital to the NEPA decision-making process. Without substantive, comparative environmental impact information regarding other possible courses of action, the ability of a NEPA document to inform agency deliberation and facilitate public involvement is greatly degraded. See *Baltimore Gas & Elec. Co.*, 462 U.S. 87, 97 (1983).

DOE Failed to Consider a Different Proportion of Fuel Mix

The DOE should also, and failed to, consider increasing the percentage of biomass used for co-firing. When coal is co-fired with biomass it substantially reduces the emissions of regulated pollutants, including carbon monoxide and greenhouse gas pollutants, such as carbon dioxide. Increasing the percentage of biomass used to co-fire proportionately reduces the emissions of regulated and greenhouse gas pollutants. There are numerous examples of coal plants co-firing biomass at large percentages. For example, the St. Paul heating plant burns approximately 60% biomass and 40% coal. The biomass is primarily waste wood from tree trimmings and other industrial activities. The Xcel Bay Point power plant in Ashland, Wisconsin, also burns large amounts of wood waste, consisting primarily of saw dust. The DOE has urged federal facility managers to consider co-firing up to 20% biomass in existing coal-fired boilers. The DOE should consider an alternative that requires Viresco to burn at least 60% biomass in the Project.

60-07

DOE Failed to Consider an Air-Cooled Plant Design as an Alternative

The proposed facility will require 3,250 gallons of water per day (MGD), which will create a serious strain on the surrounding environment as a result of the drawdown of the aquifer. Draft EA at 48. Considering that most coal-fired generation units run for at least 30 to 40 years, this would also adversely affect human users by drawing down the aquifer in a very arid area. Draft EA at 67. The

60-08

⁷ NETL, "Economic Impacts of U.S. Liquid Fuel Mitigation Options," July 8, 2006. DOE/NETL-2006-1287 at page 31.

Responses**Comment 60-07**

As stated in the EA, the percentage of biomass in the feed is expected to be 10 to 50 percent by weight. As stated in response to comment number 8-02, the proposed Pilot Plant is intended to demonstrate the hydrogasification process at a size that would provide economic performance data adaptable to a commercial-scale facility. An objective of the demonstration is to determine the economic feasibility of using larger proportions of woody waste in the feedstock.

Comment 60-08

As discussed in responses to comment numbers 15-21 and 57-12, Viresco intends to use the City of Kanab's water supply for the Pilot Plant. Under the 30-day operation, the plant would need 3,290 gpd, while under the 130-day operation, 4,130 gpd of groundwater would be required. This represents 0.07 percent and 0.08 percent of the daily Kanab municipal well capacity, and 0.13 percent and 0.16 percent of the Kanab daily use, respectively. The water demand by the Pilot Plant is, therefore, considered a small amount compared to the availability of water resources in the project area and is not expected to result in more than minor impacts to agricultural resources. Section 2.8 of the EA states that under the connected action Viresco may operate its Pilot Plant for a maximum of 130 days during a calendar year if it is able to obtain financing. The comparison of pilot unit operation to commercial operation of "coal-fired generation units" over 30 to 40 years is not valid. Likewise, the use of an air-cooled plant design for a pilot unit is not reasonable.

Commenter 60 – Bill Corcoran and Kristin Henry (continued)

**60-08
(cont'd)**

Draft EA should also state what effect this might have on agricultural use of water in the area.

The use of an air-cooled plant design, or even an air-water hybrid cooler, would save valuable potable water every day for forty years, the effects of which DOE must analyze in the Draft EA.⁹

V. The Draft EA Inadequately Analyzed Impacts because it Limited its Review of Impacts to 30-days of Operation and Refused to Consider Impacts Associated with the Combustion of Coal and Biomass and Syngas Produced.

DOE is proposing to provide Viresco with \$2,404,000 to support its design, construction, and testing of a pilot-scale steam hydrogasification facility. With DOE funding, Viresco plans to operate the plant for 30 days. Viresco plans to seek additional funding to continue operations beyond this time period. Viresco claims that if it continues operation "it would probably not exceed 130 days of operation in any year." Draft EA at 1.

60-09

For every resource examined in the Draft EA, the DOE limited its impacts analysis to either 30 days or 130 days. It is unreasonable for DOE to limit its environmental impacts analysis to 30 or 130 days because it is reasonably foreseeable that a commercial investor would operate the facility full-time in order to recoup its investment. In addition, most coal-fired industrial units operate for at least 30 years. DOE should examine the full environmental impacts assuming the plant will operate 24 hours a day, 365 days a year for 30 years. DOE's failure to evaluate the feasible and realistic operation scenario renders the EA fatally flawed.

As discussed above, DOE also unreasonably limited the scope of its analysis to actions occurring at the site of the Pilot Project, excluding analysis of the impacts associated with the combustion of coal and biomass to create a feedstock. These actions are also connected to the Viresco Project and thus within the scope of a proper EA analysis. While DOE unreasonably limited its analysis for every resource in this fashion, Sierra Club will walk through a few of these deficient analyses below.

Climate Change Impacts

60-10

The DOE only analyzed the environmental impacts associated with the release of 543 tons of carbon dioxide. Draft EA at 45, 68. This is the amount of carbon dioxide that the Project would emit during 30 days of operation. Draft EA at

⁹ This is a feasible, widely-used technology. There are existing coal-fired air-cooled power plants in Wyoming (two Neil Simpson plants and the Wyodak plant), and numerous other air-cooled plants around the US and the rest of the world.

Responses

Comment 60-09

As addressed in the response to comment number 6-01, DOE's proposed action is to provide financial assistance to Viresco. DOE examined potential environmental impacts for Viresco's planned 30-day testing period of operation covered in the cooperative agreement. Because Viresco has expressed an interest in conducting additional testing of the process, DOE also evaluated the potential environmental impacts of an additional 130-day operational testing period. There are no specific plans for operation of the proposed Pilot Plant beyond the 130-day testing period. As stated in Section 2.8, Consideration of Connected Actions, of the Draft EA, "Viresco's plans for operating its facility after DOE's involvement ends are not well-defined and would depend on the objectives the provider of any additional funding sought to achieve. However, it is likely that any future operations would continue to test the gasification process in order to improve its operation and output to achieve high process efficiency." The analysis of potential environmental impacts for the currently proposed additional operational period of 130 days is covered as a connected action in the Final EA under Section 2.8 and under each environmental resource in Chapter 3. If Viresco were to seek federal funding for additional upgrades or expansions to the Pilot Plant, a future NEPA review by the agency that was considering providing additional funds would be undertaken at that time. Any further operation would depend on the objectives that agency sought to achieve, which is unknown at this time.

In addition, pilot units are operated to obtain data. They are not intended to be used for commercial production, like electric generating units, as suggested by the commenter. DOE does not believe that operation for 24 hours a day, 365 days a year for 30 years is reasonably foreseeable, realistic or feasible.

Comment 60-10

The Draft EA addressed the cumulative impacts of the proposed Pilot Plant on GHG and climate change in Section 4.2.6. The incremental addition of the proposed Pilot Plant to GHG emissions is stated in this section as 543 tons (493 metric tons) of direct CO₂-equivalent emissions during the demonstration period. The Final EA has been updated to state that the direct CO₂-equivalent GHG emissions would be approximately 2,588 tons (2,353 metric tons) based on 130 days of operation. According to CEQ's draft NEPA guidance on "Consideration of the Effects of Climate Change and Greenhouse Gas Emissions," if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of CO₂-equivalent GHG emissions on an annual basis, agencies should consider this an indicator

Commenter 60 – Bill Corcoran and Kristin Henry (continued)

68. The DOE never attempted to qualify emissions of other greenhouse gas emissions.

First, this analysis is unreasonable because it did not even analyze the environmental impacts associated with the 130-days of carbon dioxide emissions that both Viresco and DOE state is the expected future operation. Since this is a time period that both Viresco and DOE acknowledge this facility is likely to operate annually, it was unreasonable for the agency not to analyze the impacts associated with this extra 100 days of emissions. Second, it is realistic that once Viresco obtains financing it will need to operate the facility full-time in order to recoup its investment. If the facility was running 365 days a year, this facility would emit 6,516 tons of carbon dioxide daily. DOE should have used this emission limit for the syngas production phase of the Project.

In addition, DOE failed to analyze the environmental impacts associated with utilizing the synthetic fuel created at the facility. For the pilot project, Viresco has stated that "there are no plans to utilize the resulting synthesis gas for sale or for downstream processes." Draft EA at 9. Limiting the scope of analysis to exclude end-use of the synthetic gas is also unreasonable because if a commercial investor funds operation of this facility it will want to recoup its investment by selling the synthetic gas.

Including the environmental impacts associated with end use of the synthetic gas would significantly alter the impacts associated with this project. Liquid coal is produced when coal is converted into transportation fuels. Manufactured by converting coal into a gas and then into a synfuel, liquid coal requires huge inputs of both coal and energy. In fact, one ton of coal produces only two barrels of fuel.⁹ Due to the inefficient conversion process, the properties of dirty coal, and the large amounts of energy required to convert coal to liquids, liquid coal produces almost double the global warming emissions as regular gasoline.¹⁰ Even if the carbon released during production was somehow captured and stored—a technology known as carbon capture and sequestration that remains unproven at any meaningful scale—liquid coal would still release 4 to 8 percent more global warming pollution than regular gasoline.¹¹

Finally, DOE did not account for greenhouse gas emissions associated with the combustion of the coal. Draft EA at 2, 43. Not accounting for the emissions associated with combusting the coal is illegally piecemealing the project. See

⁹ NETL, "Economic Impacts of U.S. Liquid Fuel Mitigation Options," July 8, 2006. DOE/NETL-2006-1237.

¹⁰ Williams, Robert et al., "Synthetic fuels in a world with high oil and carbon prices," 8th International Conference on Greenhouse Gas Control Technologies, June 2006.

¹¹ U.S. EPA, "Greenhouse Gas Impacts of Expanded Renewable and Alternative Fuels Use," April 2007 and Williams, Robert et al. above.

Responses**Comment 60-10 (continued)**

that a quantitative and qualitative assessment may be meaningful to decisionmakers and the public. Emissions from the proposed Pilot Plant would be far below this threshold. Even if the proposed Pilot Plant could operate 365 days per year, the maximum potential emission of 6,600 metric tons of CO₂-equivalent GHG per year would be only about 26% of the threshold. On this basis, DOE does not believe additional analysis for GHG emissions is warranted.

As explained in response to comment 51-29, because the Pilot Plant would be a demonstration project at a scalable size to provide economic data that would be used to assess the commercial feasibility of the steam hydrogasification process, the synthesis gas would be combusted properly in a flare system. No fuel products or electricity would be produced by the proposed project. The demonstration project would provide data that would support the accounting for GHG emissions proposed by the commenter.

60-10
(cont'd)

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Commenter 60 – Bill Corcoran and Kristin Henry (continued)

Responses

**60-10
(cont'd)**

detailed discussion above. DOE should add the greenhouse gas emission associated with the combustion phase of the project to the other greenhouse gas emissions from the other phases and analyze the impacts associated with all of these emissions.

Once the greenhouse gas emissions (including carbon dioxide and other greenhouse gas pollutants) associated with full-scale operation of the facility (including the combustion of the coal for this project and produced syngas), this project would unquestionably exceed the 25,000 metric tons threshold for carbon dioxide suggested by the Council on Environmental Quality. DOE is thus required to evaluate these impacts.

On December 7, 2009, the Environmental Protection Agency formally declared that carbon dioxide emitted from the burning of fossil fuels poses a threat to human health and welfare. The Viresco Project and the combustion of its synthetically produced fuel will emit thousands of tons of carbon dioxide and other harmful pollutants every year. The impacts of these emissions deserve considered and complete analysis by DOE in the Draft EA.

The Draft EA should also evaluate the air pollution impacts of the proposed facility as compared with the impacts of other alternatives evaluated; but because no alternatives were discussed, this evaluation is entirely missing from the Draft EA. The DOE should remedy this problem with a new analysis.

Air Emission Impacts

As with greenhouse gas emissions, the analysis of impacts associated with air emissions is extremely deficient. First, DOE limited its analysis to 30-days of emissions, rather than full-scale operation or even a 130-day annual operating period. Draft EA at 41-45. The agency also failed to account for emissions associated with end use of the syngas and combustion of the coal and biomass for feedstock. It is contrary to NEPA to exclude these emissions because they are associated with connected actions and/or are within the scope of impacts the agency should consider. The DOE needs to address the significant increase in pollution that the totality of this project will create in a new environmental analysis.

Once the agency quantifies the actual total emissions associated with this Project, the DOE should redo its analysis to consider impacts to sensitive populations, such as children and the elderly, as well as impacts to the general public. While this analysis should include the criteria pollutants (sulfur dioxide, nitrogen oxide, particulate matter, and sulfuric acid mist), it should also examine the impacts from all other pollutants that would be emitted, including hazardous air pollutants, diesel exhaust, and both RGM and elemental mercury. The DOE must consider the gasifiers themselves and other units, such as on-site diesel

Comment 60-11

In response to comments on the Draft EA, the analysis in Section 3.5.2.1 of the Final EA was expanded to include a review of air emissions during the 130 days of operation. Based on the analysis in the Final EA, the Pilot Plant would be either an insignificant or a minor source for all air pollutants including hazardous air pollutants (HAPs). Although the new sources of air emissions would be small, additional air dispersion modeling was performed for the Final EA in response to comments on the Draft EA. The dispersion modeling incorporated worst-case meteorological conditions. The maximum predicted downwind concentrations of all criteria pollutants would be well below the National Ambient Air Quality Standards (NAAQS).

DOE has determined that no additional air quality studies are necessary to take the required hard look under NEPA. Notably, the Utah Division of Air Quality (UDAQ) concurs with the evaluation in the EA that the Pilot Plant will be an insignificant source of air emissions, and that it meets the requirements for a Small Source Exemption under Utah Administrative Code (UAC) R307-401-9. A copy of the concurrence letter from UDAQ is included as commenter 48 (see comment number 48-01).

Short- and long-term minor adverse effects on air quality would be expected. Increases in emissions would be de minimis (of minimal importance) and a project of this size would not interfere with the ability of the region to maintain the National Ambient Air Quality Standards, or have a significant effect on human health and welfare with respect to air quality. Notably, because the emissions would be very small and concentrations would not exceed the NAAQS, it is anticipated that there would be negligible to minor impacts to the nearby reservoir, wildlife, or recreation areas.

As stated in the Draft EA, with regard to HAPs, high molecular weight organic compounds or toxic metals would not be expected in quantities that would pose a health hazard, based on the combustion efficiency of the flare and the small concentrations of metals in the feedstock to the gasifier.

E-179

60-11

Responses

Commenter 60 – Bill Corcoran and Kristin Henry (continued)

emissions from stationary, mobile sources, and construction equipment, and fugitive emissions from haul roads, coal piles, and coal moving. The environmental analysis should also consider air impacts from the life cycle of the fuel.

As for the criteria pollutants, the analysis should not simply end because some impacts are below the current National Ambient Air Quality Standards (NAAQS) for several reasons. First, EPA is currently in violation of its legal obligation to update and revise the NAAQS (except for particulate matter) and an EA should not rely on out-dated information. In addition, NAAQS do not always protect public health. For instance, the EPA has acknowledged that adverse impacts, including premature mortality, are observed from ambient levels of PM 2.5 below the NAAQS. In fact, the EPA has concluded that it could not find any threshold below which it did not find adverse impacts.

Finally, the DOE should evaluate the air pollution impacts of the proposed facility as compared with the impacts of other alternatives evaluated; but because no alternatives were discussed, this evaluation is entirely missing from the Draft EA. The DOE should remedy this problem with a new analysis.

The draft EA must analyze the direct, indirect and cumulative human health and environmental impacts caused by all air pollutant emissions from the Viresco project operating full-time for 30 years, including, but not limited to:

- a) Emission of criteria and hazardous air pollutants for the life of the facility--including SO₂, CO, NO_x, ozone, particulate matter (both PM₁₀ and PM_{2.5}), mercury, sulfuric acid, and CO₂ and other greenhouse gases.
- b) A consideration of emissions from existing and reasonably anticipated proposed air emission sources on National Ambient Air Quality Standards and increment compliance for SO₂, NO_x, ozone, CO₂, and particulate matter.
- c) Visibility degradation in Class I and Class II areas must also be analyzed.
- d) Mercury deposition in local and regional waters must be analyzed and the corresponding, uptake by livestock, humans, and wildlife.
- e) A soils and vegetation analysis in a 25 mile radius of the Viresco project should be analyzed.
- f) Regional health impacts due to existing and additional pollution, such as asthma, cancer, stroke, and premature death. This analysis must

60-11

E-180

Commenter 60 – Bill Corcoran and Kristin Henry (continued)

60-11

include a complete respiratory health analysis of the communities surrounding existing and proposed coal plants.

In addition to assessing the air pollution from the Viresco plant, the EA must also calculate the air pollution emitted as a result of the combustion of each feedstock to be utilized by the Viresco project.

Impacts to National Parks and Class I areas

Within a 300 km range of the proposed Viresco Project there are numerous Class I areas: Zion National Park, the Grand Canyon National Park, Bryce Canyon National Park, Sycamore Canyon Wilderness, and Canyonlands National Park. Draft EA at 42. These Class I areas are already under tremendous pressure from numerous existing and proposed coal-fire power plants and other emission sources in Southwestern United States. The DOE needs to evaluate the impact of the Viresco Project on these Class I areas, taking into account existing and proposed sources.

60-12

In 1977 Congress amended the Clean Air Act and designated certain federal lands as Class I areas, giving them the greatest level of protection under the Act. To protect the air in Class I areas, Congress created the prevention of significant deterioration or PSD program. PSD seeks to "preserve, protect, and enhance the air quality in national parks, national wilderness areas, national monuments, national seashores, and other areas of special ... natural, recreational, scenic or historic value." Clean Air Act Sec. 160.

Under PSD, Congress established limits (known as increments) on additional amounts of pollution in Class I areas over baseline conditions that existed in 1977 when PSD was enacted. Increments are in place for emissions of sulfur dioxide, particulate matter, and nitrogen oxides. Because Congress sought to protect air quality not just from long-term pollution increases, but also from fluctuations and "spikes" that occur at certain times of year (e.g., peak summer energy demand), it created both annual and short-term (3 and 24 hours) increments for these pollutants.

Since Congress wants Class I areas to have the cleanest air in the country, these parks and wilderness areas have the smallest increments, or allowable amounts of new pollution. The DOE needs to do a study (known as an increment analysis) to show how much pollution is already in the Class I area and how much additional pollution the Viresco Project will add.

The Viresco Project, once the entire scope of the Project and its connected actions are accounted for, will likely have impacts at these Class I areas, as well as on regional haze.

Responses**Comment 60-12**

The subject of this comment has been addressed in the response to comment number 13-01. No impacts to Class I areas are anticipated.

Commenter 60 – Bill Corcoran and Kristin Henry (continued)

Ground Water Impacts

60-13

The analysis of impacts to ground water is completely inadequate. DOE limited its analysis to 130-days of emissions, rather than full-scale operation that is reasonable foreseeable. The agency should redo its analysis to account for full-scale operation of this facility and determine whether this will have negative impacts on wildlife and humans because of increased aquifer drawdown.

Finally, improper disposal of coal ash can lead to ground water contamination issues. Viresco has failed to identify how it will dispose of coal ash. It is reasonably foreseeable that the company would either inadequately dispose of the ash on site or another inadequate landfill. The agency should analyze what impact this disposal would have on groundwater.

Mining

60-14

The Draft EA did not analyze the environmental effects of mining the coal that would be used as a feedstock for this Project. The DOE should have analyzed these impacts because these are indirect, secondary environmental effects that are clearly foreseeable. Building the proposed Viresco Project will require that more coal be mined to feed the plant. Thus, the DOE should analyze the environmental impacts of the coal mining activity that will occur to generate the feedstock.

60-15

VI. The Cumulative Impacts Analysis is Completely Inadequate As it Does Not Address Any Past Projects and Ignores Reasonably Foreseeable Future Projects.

A discussion of the cumulative environmental effects of a proposed action is an essential part of the environmental review process, for otherwise the agency cannot evaluate the combined environmental effect of related actions. Cumulative impact is defined in NEPA's implementing regulations as "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 Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 C.F.R. § 1508.7(emphasis added); *see also Muckleshoot Indian Tribe v. United States Forest Serv.*, 177 F.3d 800, 809 (9th Cir.1999) (per curiam) (quoting 40 C.F.R. § 1508.7).

An environmental analysis must include a "useful analysis of the cumulative impacts of past, present and future projects" in sufficient detail to be "useful to the decisionmaker in deciding whether, or how, to alter the program to lessen cumulative impacts." *Id.* at 810 (citation omitted). The EA must at a minimum provide a "catalog of past projects" and a "discussion of how those projects (and

Responses

Comment 60-13

DOE examined potential environmental impacts for a reasonably foreseeable time period based on the best information available at the time of Draft EA preparation. This time period covered 30 days of operation during the first year along with additional 130 day testing period thereafter. DOE is not aware of any specific or identified plans by Viresco for operation of the proposed Pilot Plant beyond the 130 day testing period. Therefore, DOE does not believe further analysis is warranted to cover additional operational periods.

The subject of this comment regarding disposal of ash at the Kane County Landfill has been addressed in the response to comment number 15-09. Viresco would not dispose of the ash on the project site. Any landfill that would be permitted to accept the ash would have the groundwater monitoring controls to ensure that groundwater contamination would not occur. The ash produced by the Pilot Plant is expected to be nonhazardous; however, if testing results indicate it is hazardous; the ash would be disposed of at a facility permitted to accept hazardous waste.

Comment 60-14

As stated in Section 4.3, "The effects of commercial coal mining are generally well known and well described and are not within the scope of this EA. The proposed project does not aim to change mining techniques and, for the proposed project, DOE has no decisions that would affect coal mining techniques. It is assumed that the coal intended for the proposed project would be used as a feedstock for another facility in the event that the Pilot Plant is not constructed, because coal is an abundant and economical source of energy in the United States."

The subject of this comment has also been addressed in the response to comment number 21-06.

Comment 60-15

Section 4.2 of the Final EA has been updated to identify past projects, including land development trends, and describe how these projects and trends have affected the environment and contributed to the potential for cumulative impacts.

Commenter 60 – Bill Corcoran and Kristin Henry (continued)

differences between the projects) have harmed the environment.” *Lands Council v. Powell*, 395 F.3d 1019, 1027 (9th Cir. 2005).

A. The Draft EA Fails to Discuss Any Past Projects in its Cumulative Impacts Analysis.

60-16

The Cumulative Impacts section of the Draft EA does not list one single past or existing project. This is contrary to NEPA. See 40 C.F.R. § 1508.7 (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 Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” (emphasis added). The DOE needs to catalog the past and existing projects and determine if the incremental impact of the action will have a significant. *Lands Council*, 395 F.3d at 1027.

Key areas that the DOE should focus on are other projects that emit significant amounts of air pollutants and greenhouse gas pollutants (such as the Navajo Generating Station, Reid Gardner Power Plant, and Intermountain Power Plant), and rely on the aquifer for its supply of water. For instance, the Draft EA states that the Viresco Project will only use approximately .06% of the Coconino-De Chelly Aquifer and that this does not represent a significant impact on the environment. However, without a complete analysis of how much of the aquifer has currently been depleted by past projects, how many projects are currently using the aquifer and what is the percentage of consumption for all of these projects, and based on this cumulative aquifer consumption, when is the aquifer expected to be depleted, it is impossible to truly evaluate what impact this Project will have on groundwater.

B. The Draft EA Fails to Adequately Discuss Totality of Environmental Consequences

60-17

The Draft EA environmental consequences are evaluated in Chapter 3, but are done so in a deceptively piecemeal way. The effect of this is that no ultimate environmental impact is easily derived from this section. For example, the Draft EA never analyzes impacts associated with the combustion of coal, although this is a connected action, or the end-use of the synthetic gas that is produced. Such an analysis does not provide the public with quality information regarding the ultimate effects of the proposed action. These deficiencies are discussed in detail above.

C. The Draft EA Must Consider the Economic Impact of Emitting Greenhouse Gases

60-18

The Draft EA did not evaluate the economic impacts of emitting millions of tons of carbon dioxide annually and over the commercial life of the facility. Peer

Responses**Comment 60-16**

The Draft EA addressed potential cumulative impacts in Section 4.2 and determined that the minor to moderate adverse impacts of the proposed Pilot Plant in combination with other projects in the vicinity would not result in significant adverse impacts on any of the resources analyzed. The Draft EA addressed emissions from the proposed Pilot Plant in Section 3.5.2 (under Air Quality and Climate), which concluded that the plant would not contribute to a violation of any federal, state, or local air regulation. The Utah Division of Air Quality determined that the proposed Pilot Plant meets the requirements for a Small Source Exemption under Utah Administrative Code R307-401-9.

The commenter suggests that the emissions and impacts of the proposed Pilot Plant, which would occupy approximately 1.5 acres of land, consume 650 tons of coal and less than 0.1 million gallons of water in 130 days of operation, and be exempt from a state air permit, should be evaluated cumulatively with facilities such as the Navajo Generating Station, the Reid Gardner Power Plant, and the Intermountain Power Plant. The Navajo Generating Station is a 2,250-megawatt coal-fired facility located approximately 60 miles east of Kanab near Page, AZ, which consumes 8 million tons of coal and uses 9 billion gallons of water per year. The Reid Gardner Generating Station is a 550-megawatt coal-fired plant located on 480 acres in Moapa Valley, NV approximately 100 miles southwest of Kanab, which uses 2.7 billion gallons of water per year. The Intermountain Power Plant is a 1,600-megawatt coal-fired plant located on 4,000 acres near Delta, UT approximately 70 miles north of Kanab, which consumes 5.3 million tons of coal per year. DOE considers that the incremental effects of the proposed Pilot Plant to the cumulative impacts of these much larger power plants would be so small as to be trivial, particularly based on the substantial distances separating them from the proposed site. Therefore, DOE focused the cumulative impacts analysis on projects in the immediate vicinity of Kanab.

Comment 60-17

The subject of coal combustion has been addressed in response to comment number 60-02. As stated in response to comment number 51-29, the Draft EA explains that the proposed Pilot Plant would convert coal and biomass into a synthesis gas suitable for further processing to a liquid fuel or substitute natural gas. But, because the Pilot Plant would be a demonstration project at a scalable size to provide economic data that would be used to assess the commercial feasibility of the steam hydrogasification process, the synthesis gas would be combusted properly in a flare system. No fuel products or electricity would be produced by the proposed project.

Comment 60-18

The subject of this comment has been addressed in the response to comment number 60-10.

Commenter 60 – Bill Corcoran and Kristin Henry (continued)

**60-18
(cont'd)**

reviewed studies have been performed which model the economic costs of global warming and carbon dioxide emissions.¹² Synapse Energy Economics predicts that carbon dioxide costs could rise to \$68/ton by 2030 – less than two decades into the life of the proposed Viresco plant. Other studies have estimated that each ton of carbon dioxide emitted causes approximately \$85 in damage. The DOE cannot turn a blind eye to these damages and the EA process must analyze the economic impact of emitting over millions tons of carbon dioxide annually.¹³

Of particular significance to Utah, climate change is stressing the Southwest's over-allocated water resources, increasing impacts associated with hot temperatures and extreme weather, such as heat-related mortality, storm-related fatalities and injuries, and increasing the rate and intensity of wildfires and insect outbreaks. Draft EA at 67. Greater greenhouse gas emissions from coal-burning projects would lead to more significant atmospheric warming and larger and more frequent storms and heat waves. The EA should consider the impacts to Utah from each of the impacts that will accompany global warming.

D. The Draft EA must consider the Reasonable Foreseeable Project to Install the 12.5 kV transmission Line.

60-19

The Draft EA at Appendix 3 states the construction of a 12.5 kV power line is needed for the Viresco Project to operate. The Draft EA does not analyze environmental impacts associated with this project in its cumulative impacts analysis, which is inadequate.

VII. The Draft EA Fails to Analyze a Full Range of Mitigation Measures that Would Reduce Impacts.

60-20

The DOE failed to analyze the full range of mitigation measures that would reduce impacts associated with the proposed Viresco Project. The agency overlooked the majority of these mitigation measures because the agency established a purpose and need section so narrowly tailored that only one project, the proposed project, would satisfy it.

If the agency were to reframe the purpose of this action, a number of different measures or approaches would apply that could mitigate impacts, such as:

¹² Stern, N., Stern Review on the Economics of Climate Change. Cambridge University Press. Available at <http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm>.

¹³ As explained above, the DOE never calculated the full amount of greenhouse gas pollutants the Viresco Project will emit because it failed to include emissions associated with coal and syngas combustion. Thus it is currently unknown how many millions of tons of greenhouse gas pollutants this Project will produce.

Responses

Comment 60-19

The subject of this comment has been addressed in the response to comment number 51-17.

Comment 60-20

DOE explained its involvement in the selection of alternatives for the proposed action in the response to comment number 8-01 (also 60-03). The response to comment number 60-04 explains DOE's basis for not considering alternative technologies or efficiency programs. In Section 1.2 of the EA, DOE explains that the objective of the proposed project is to conduct a pilot-scale evaluation of the steam hydrogasification reaction. Alternative technologies proposed by the commenter would not achieve this objective.

Commenter 60 – Bill Corcoran and Kristin Henry (continued)

**60-20
(cont'd)**

- o An alternate project location could reduce and mitigate impacts to cultural resources, treasured public lands, and underground drinking water aquifers.
- o Different efficiency programs or different supply approaches, such as vehicle efficiency programs, increased enhanced oil recovery, could reduce air impacts, including global warming impacts.

The DOE should address these deficiencies before it considers which project alternative best mitigates impacts associated with the project.

Conclusion

For the above stated reasons, the Sierra Club recommends that DOE reject the Viresco project or substantially revise the Draft EA to address these deficiencies and provide the public with an opportunity to review and comment the document.

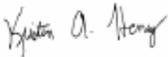
60-21

Thank you for the opportunity to comment on the Draft EA and please keep us informed of developments in this process. In addition, thank you for your attention to our concerns.

Sincerely,



Bill Corcoran
Western Regional Campaign Director, Beyond Coal
Sierra Club
3435 Wilshire Boulevard, Suite 660
Los Angeles, CA 90010



Kristin A. Henry, Sierra Club Staff Attorney
Sierra Club
85 Second St, 2nd Floor
San Francisco, CA 94105

Responses

Comment 60-21

Comment noted.

Commenter 61 – Ted Brewer

Joseph Zambelli - comments re: EA of Utah Coal & Biomass Fueled Pilot Plant

From: "Ted Brewer" <ted_brewer@hotmail.com>
To: <joseph.zambelli@netl.doe.gov>
Date: 9/16/2011 12:04 PM
Subject: comments re: EA of Utah Coal & Biomass Fueled Pilot Plant

Mr. Zambelli,

The following are my comments in regards to the environmental assessment of the Viresco coal and biomass fueled plant, proposed for construction in Kanab, Utah.

Purpose and need/alternative:

61-01 | Nowhere in the EA is it demonstrated why the proposed pilot plant needs to be located in Kanab, Utah. Nor does the EA show any analysis of alternative sites. Therefore, the EA never answers the question that many, many people who live in Kanab and oppose the plant have: why does this plant need to be located here?

Decommissioning:

61-02 | "The Pilot Plant would be decommissioned and the site restored no later than the end of the site lease period."

How would this happen exactly? Would every component of the facility be removed?

Existing conditions and environmental consequences:

61-03 | There is no mention in the EA of an analysis regarding existing conditions and environmental consequences. Evaluative statements are made without any reference to an analysis or supporting data.

Economy and Employment:

61-04 | "Although plant structures would be visible from US 89A and parts of the City of Kanab, particularly the Kanab Creek Ranchos neighborhood, the Pilot Plant would be located in proximity to the Kanab Municipal Airport, the Kane County Public Safety Facility, the Kane County Landfill, and existing communication towers, which are already visible from the same locations and have not detracted from regional tourism."

This is not an analytical statement and does not address potential impacts. I live in the Kanab Creek Ranchos. The county landfill is far enough away from this neighborhood that one cannot tell that it is a landfill. The propose plant's smokestack is much closer, and would be a blatant part of the view from the neighborhood. Would this smokestack bring our property values down? The EA does not sufficiently answer this question.

Cultural Resources:

61-05 | The discovery of prehistoric human remains at an archaeological site investigated during the course of the Jackson Flat Water Supply Storage project, however, has heightened concerns among the Kaibab Band of Paiute Indians that human remains may be encountered during construction for the present project."

EA does not address what would happen if human remains are found? Nor does the EA attempt to analyze whether this is a good possibility human remains would be found. Was an archaeologist consulted?

Responses**Comment 61-01**

The subject of this comment has been addressed in the response to comment number 8-01.

Comment 61-02

Section 2.7.5 was revised in the Final EA to include a discussion of specific decommissioning activities that would occur.

Comment 61-03

DOE believes that the analysis of impacts in this EA is appropriate for the size and complexity of the project in comparison to similar-sized projects funded by DOE actions. As stated in response to comment 26-10, CEQ NEPA regulations recognize the need to express impacts in qualitative terms when quantitative measurements are either not available or not meaningful for comparative analysis. DOE has added definitions for impacts to Section 3.0 of the Final EA described as beneficial, negligible, minor, moderate, and substantial.

Comment 61-04

Figure 3-6 has been revised in the Final EA (now Figure 3-7) to show approximately how large the Pilot Plant would appear from the same vantage point in comparison to the visibility of nearby manmade features, including the Kanab Municipal Airport, the Kane County Public Safety Facility, and the Kane County Landfill. As conceptually depicted in Figure 2-3, the Pilot Plant would be comparable to a relatively modest commercial-industrial facility occupying an acre and a half. Except for the exhaust flare structure and associated scaffolding, the facility would be comparable to other commercial-industrial facilities located along US 89A and elsewhere in Fredonia and Kanab. Because the Pilot Plant would gasify coal into a synthesis gas that would be combusted, the flare would be comparable to a natural gas flare and not to a "smokestack" associated with a coal combustion facility. As stated in response to comment 26-10, there is evidence that construction of a full-scale power plant (greater than 100 megawatts capacity) could affect local real estate values (Davis, 2010). However, the study results are not relevant due to the difference in scale compared to the proposed Pilot Plant, which would occupy approximately 1.5 acres of land, consume 5 tons of coal per day of operation, and have "de minimus" air emissions.

Comment 61-05

Sections 1.4 and 3.4.2 of the EA discuss coordination with Native American tribes and what actions and precautions would be taken in the event that cultural resources, artifacts, human remains, or burial sites are discovered during construction of the Pilot Plant.

Commenter 61 – Ted Brewer (continued)

**61-05
(cont'd)**

remains found during the construction of the Jackson Flat Reservoir are currently being stored in shipping containers. Is that how Viresco would handle remains if found?

61-06

in that the population of Kanab is overwhelmingly against having this plant sited here (as demonstrated in the scoping meetings and in the comments the DOE has so far received), I insist that the DOE complete an EIS, which would allow for analysis of an alternative site for this plant.

erely,

J Brewer
W Vance Dr.
Alb, Utah 84741

Responses

Comment 61-06

The subject of this comment has been addressed in the responses to comment numbers 12-01 and 51-02.

Commenter 62 – Tom Carter

Joseph Zambelli - Utah coal and Biomass Fueled Pilot Project

From: "Tom Carter" <tommar@kanab.net>
To: <joseph.zambelli@netl.doe.gov>
Date: 9/16/2011 1:49 PM
Subject: Utah coal and Biomass Fueled Pilot Project

Sir: I do not find in the EA of the above proposal, any indepth analysis of the concerns that I listed in my Initial comments please Note:

62-01

There was an inadequate study of the prevalling wind patterns. They are generally westerly, which puts myself and my wife, and both of us have respiratory illnesses, at risk. Please have a census taken of those who have respiratory issues in this vincinity and demonstrate how the pollution stearm from the stacks of the plant will or will not effect them.

62-02

The EA doesn't indicate how the water used in the process will be contained or how it will be prevented from entering Kanab's water treatment system or how it will be prevented from accidently entering Jackson Reservoir. Please examine this problem in an EIS.

62-03

The socioeconomic effect of an industrial plant in a tourist economy was not addressed adequately. Please include in an EIS a poll of the business owners in this area to determine if an industrial plant will effect their business and their incomes.

62-04

An EIS is needed to determine if the construction of this plant will disturb Native American archeological sites , since burials were uncovered nearby.

In sum, The EA glossed over these issues and the importance of the potential environmental dangers which requires the further study of this project in the form of an EIS. Thank You

Tom Carter 4507 E. Redcliffs Dr. Kanab, Utah 435 644 5532

Responses

Comment 62-01

The subject of this comment has been addressed in the responses to comment numbers 13-01, 21-02 and 32-05.

Comment 62-02

The subject of this comment has been addressed in the responses to comment numbers 9-01, 15-05, 40-27, and 56-15.

Comment 62-03

The subject of this comment has been addressed in the response to comment numbers 51-03 and 21-03.

Comment 62-04

The subject of this comment has been addressed in the responses to comment numbers 12-01 and 51-02.

Commenter 63 – Tracy Hiscock

Joseph Zambelli - Comments on the Utah Coal and Biomass Fueled Pilot Project

From: "John and Tracy Hiscock" <4badants@kanab.net>
To: <joseph.zambelli@netl.doe.gov>
Date: 9/16/2011 4:20 PM
Subject: Comments on the Utah Coal and Biomass Fueled Pilot Project

September 15, 2011

Mr. Joseph Zambelli
NEPA Document Manager
U.S. DOE-National Energy Technology Laboratory
3610 Collins Ferry Road
PO Box 880
Morgantown, WV
26507-0880

Subject: Comments on Draft EA for Utah Coal and Biomass Fueled Pilot Plant (DOE/EA-1870)

Dear Mr. Zambelli:

I have been following the events regarding the possible location of the proposed Viresco coal gasification plant within Kanab, Ut, and the use of taxpayer funds for such a project. I have been a resident of Kanab for the past 15 years. My husband and I chose to raise our children in this area because of the powerful beauty, clean air and water, dark skies, quiet atmosphere, wilderness solitude, spectacular vistas, and outstanding hiking and other recreational opportunities available here. I have been appalled at the local process followed by the Kanab City Council and other local politicians in regards to this project. I have also been closely following the larger process and believe that the DOE has failed in its obligations under the National Environmental Policy Act.

63-01

I submitted comments during the scoping period. I believe that my comments were not adequately addressed- several were not addressed at all. I ask that you grant a time extension for this comment period, as the issue is quite complex and more research is needed in order to evaluate the effects, that your scoping document is poorly organized, with specific issues confusingly mixed with others, presenting an obstacle to the fair and proper consideration of the issues by the public; and thus, the public needs more time to sort through it to provide intelligent input to the EA. In my review of the EA, I have concluded that it fails to properly analyze the potential impacts of the proposed action, and fails to properly inform the public in many ways.

63-02

This proposed project, under the National Environmental Policy Act (NEPA), compels the Department of Energy to conduct a full Environmental Impact Statement (EIS) rather than merely an Environmental Assessment (EA), primarily because the project is highly controversial and faces major public opposition here in Kanab. Additionally, there is ample evidence to suggest that the plant, if built and operated, would have significant environmental impacts that cannot be mitigated. This plant, if constructed and in the location proposed, could very well harm the health and safety of the local residents and will substantially degrade our quality of life.

These issues have been glossed over or ignored in this draft EA, which is filled with illusory claims of

Responses

Comment 63-01

Comment noted.

Comment 63-02

The subject of this comment has been addressed in the responses to comment numbers 12-01 and 51-02. DOE revised Section 3.9.2 in the Final EA to describe a potential catastrophic accident scenario during plant operations and emergency response.

Commenter 63 – Tracy Hiscock (continued)

- 63-03** | economic benefits and baseless conclusions of “de minimus” impacts, ignoring that comprehensive analysis of such impacts is mandated by NEPA. Furthermore, and most importantly, the EA fails to define and conduct analysis for the potential number of years that the site might be in operation, a fatal flaw under NEPA,
- 63-04** | At a minimum, due to the deficiencies in the EA, DOE should prepare a new draft EA, in sufficient form and addressing all relevant public concerns regarding the action, and re-release said draft EA for further public review.

School and Institutional Trust lands Administration Lease Terms not set

The EA states that the terms and condition of the SITLA lease have been negotiated, but a lease has not been signed. The lack of a signed lease indicates that the terms and conditions of said lease may change. If terms and conditions of the lease are not finalized, the potential environmental impacts of the project cannot be adequately analyzed as final terms and conditions of the lease may modify the factual scenarios under which different environmental impacts should be analyzed. NEPA analysis should only proceed after the terms and conditions of the SDITLA lease are finalized. Therefore, the EA is premature and not timely, should be retracted, and environmental analysis should not conducted until the terms and conditions of the lease are set.
- 63-05** |

Public Health & Air Quality

The release of known toxins and other potentially harmful substances into the air from these smoke stacks has simply not been analyzed in the draft EA. The EA contains no information on the number of days each year when atmospheric temperature inversions are present in the Kanab area. Smoke from wood and coal burning for heating purposes is commonly trapped over town by these inversions and easily observed during the winter. It is logical that emissions from this plant would be trapped by the inversions as well, yet this is not addressed in the EA, which merely trivializes possible general changes in air quality, noting that because Kane County is in attainment for all criteria pollutants (USEPA, 2011b), air conformity regulations do not apply. (EA, Sec. 3.5.1.1, p.41) Furthermore, it states that “because of the relatively rural area and generally good air quality, levels of CO, NO₂, SO₂, and PM₁₀ are not monitored in Kane County.” (EA, Sec.3.5.1.1, pg. 42) In other words, there has been no recent scientific evaluation of the air quality in the area.

Yet, the EA states that “Short- and long-term minor adverse effects on air quality would be expected from the proposed project. The effects would be from air emissions during construction, and from the operation of the proposed coal/biomass fueled Pilot Plant. Increases in emissions would be *de minimis* (of minimal importance) and would not contribute to a violation of any Federal, state, or local air regulation. (EA, Sec. 3.5.2, pg. 43) If the air in Kanab is too good to be monitored, how can any changes in air quality ever be measured? How can the DOE objectively make the statement that “increases in emissions would be *de minimus*”? The EA is plainly deficient in addressing this issue. It is ludicrous to suggest that because a project is located in a rural area with good, clean air, that the impact of the project on air quality will be less, and thereby acceptable (de minimus). The EA is deficient in its simplicity of conclusions and failure to even attempt to employ scientific methodology or logic.
- 63-06** |

Water

The city of Kanab is responsible for providing the water for this project. It is stated in the EA that, “Both the process water and the potable water would be supplied by the City of Kanab’s potable water system. The total daily rate of potable water use (1,520 gpd) represents 0.03 percent of the existing wells and spring capacity that supply the City of Kanab’s potable water system.” (EA, Sec. 3.6.2, pg.48) This is

Responses

- Comment 63-03**

The subject of this comment has been addressed in the response to comment number 6-01. The consideration of de minimis increases in air emissions takes into account the emissions on an annual basis.
- Comment 63-04**

The subject of this comment has been addressed in the responses to comment numbers 12-01 and 36-01.
- Comment 63-05**

The subject of this comment has been addressed in the response to comment number 15-06.
- Comment 63-06**

The Draft EA includes all direct and indirect emissions from the proposed project and compares them to the de minimis thresholds as outlined under the general conformity regulations. Table 3.5-4 shows the direct comparison. This was the basis for the determination of “minor” effects under NEPA - the regulatory review and permitting requirements were provided as additional information. The remaining subjects of this comment have been addressed in the responses to comment numbers 13-01 and 40-10.
- Comment 63-07**

As discussed in responses to comment numbers 15-21 and 57-12, Viresco intends to use the City of Kanab’s water supply for the Pilot Plant. Under the proposed action (30-day operation), the plant would need 3,290 gpd, while under the connected action (130-day operation), 4,130 gpd of groundwater would be required. This would be 0.07 percent and 0.08 percent of the daily Kanab municipal well capacity, and 0.13 percent and 0.16 percent of the Kanab daily use, respectively.

Commenter 63 – Tracy Hiscock (continued)

- 63-07 (cont'd)** the minimum amount of water which might be used for the project in a thirty day pilot period, yet since the number of potential years of the 130 day per year operation of the project is undefined, the statement quantifies nothing and is therefore meaningless. Furthermore, given that the plant process as described in the EA includes a slurry transport of feedstock, the amount of water estimated in the EA to conduct the process seems questionable. This must also be extrapolated and analyzed in relationship to the total potential operational base, for instance, under the 130 day per year scenarios.
- The EA also states that, "Therefore, minor impacts to groundwater are expected to result from operation of the Pilot Plant. No specific information on the fluctuation of groundwater levels in the immediate vicinity of the project site is available; however, groundwater aquifers in the area are generally an abundant resource." (EA, Sec. 3.6.2, pg 48) This last statement is extremely vague, unscientific, unsupported by any known scientific studies and therefore unacceptable.
- 63-08** As illustrated above, the draft EA glosses over the water use issue and completely fails to address the serious questions about whether the groundwater aquifer can support the current plant proposal, or potential expansion of the proposal to a full scale gasification plant (cumulative impacts), versus other desirable community goals – such as support of the existing economy or planned residential growth. The plant would be located directly adjacent to the new Jackson Flat reservoir and recreation area. Potential effects on the water supply and recreational uses were only mentioned and not evaluated in the draft EA, which again, fails to define the potential number of years that the plant might be operational.
- Again, we do not have much water here. There has not been a scientific analysis of the amount of water existing in the area. The EA speculates generally on the presumed abundance of water. Again, it is ludicrous to suggest that just because we seem to have an abundance of water in the aquifers, that a project using our water will have little impact. A scientific evaluation of the amount of water needed for this project and the sources of such water has simply not been addressed as required by NEPA.
- Scenic Vistas/Aesthetics
Our home is 1.8 miles west of the proposed site, at a slightly higher elevation. We enjoy, as do many Kanab residents, vast scenic views. The proposed plant would be highly visible from our home and property. Daytime views would be seriously degraded by the plants two smoke stacks and plumes of emissions.
- 63-09** The EA makes light of the construction related impacts on aesthetics, and views from residential areas. It simplistically concludes that if existing buildings at the Kanab Airport, the Kane County Public Safety Facility and the Kane County Landfill can be seen from residential areas, that the addition of the Viresco plant causes little or no additional impact on aesthetics. This is untrue.
- The EA fails to consider that the impact of a new, otherwise non-existent, industrial type facility will completely change the character of the view from residential areas. An industrial facility, particularly with large smokestacks, has totally different impacts aesthetically, than other buildings and facilities, and those aesthetic impacts are predominantly, if not wholly, negative. Viewshed aesthetic impacts are major and significant, not "minor" as stated in the EA.
- Property Values/Socio-Economic Considerations
- 63-10** The DOE analysis essentially concludes that the addition of a potential nine jobs related to the Viresco project would benefit Kanab and Kane County. This is a negligible conclusion. The EA has totally missed the most important socio-economic impacts of the proposed project. The introduction of an industrial coal gasification plant, will adversely impact both tourism and residential desirability of the

Responses

Comment 63-08

In section 3.6.2, the EA discussed the proposed action and a connected action to the current well withdrawal rate of the City of Kanab. Based on a 30-day operating period, the Pilot plant would use 0.07 percent of the total daily well capacity of the Kanab wells, and 0.13 percent of the daily water use in Kanab, about the same as 5.7 additional citizens. Therefore, the demand for process water from the Kanab municipal system is too small for it to affect the water availability for other residents. The filling of Jackson Flat Reservoir would not be affected by the implementation of the proposed action because it will be filled with water from stormwater and surface water supplies, not groundwater.

Comment 63-09

The Draft EA considered the aesthetic qualities of Kanab, and the qualitative effects of the proposed Pilot Plant on the local viewshed. Figure 3-6 has been revised in the Final EA (now Figure 3-7) to show approximately how large the Pilot Plant would appear from the same vantage point in comparison to the visibility of nearby manmade features, including the Kanab Municipal Airport, the Kane County Public Safety Facility, and the Kane County Landfill. Figure 2-3 in the EA is a conceptual illustration of the Pilot Plant showing a single exhaust flare structure, not two "smokestacks." As described in response to comment number 40-31, coal would be processed into a synthesis gas that would be combusted. The flare would be comparable to a natural gas flare and not to a "smokestack" associated with a coal combustion facility.

Commenter 63 – Tracy Hiscock (continued)

community and thus, the basic economy supported by these things. Local real estate agents have noted that the proposed plant has already had an adverse effect on the real estate market here in Kanab in that there are more people putting their homes up for sale, and less people looking to purchase real estate here.

The EA has ignored the socio-economic impacts that must be assessed as related to this project, namely, (1) the impact of the project on the mainstay tourism economy of Kanab; and (2) the impact of the project on residential property values in Kanab.

The mainstay of the Kanab economy, both historically and presently, is tourism related to visitation to parks, monuments, public lands, wilderness and nature. Visitors travel from locations worldwide to surrounding public lands, parks and monument to enjoy largely unspoiled nature and some of the finest opportunities for solitude anywhere in the world. They shop, eat and stay in Kanab as it is central to these outdoor opportunities. The placement of an industrial facility in Kanab, with potential further expansion, or duplication, contradicts the experience that these individuals are seeking. Businesses that rely upon the outdoor tourism that Kanab services will suffer. This must be addressed in the EA and identified as a significant socio-economic impact. The negative economic impact of the Viresco project on the desirability of Kanab to tourists traveling through the area cannot be overcome by the addition of nine potential Viresco employees.

Closely related, is the socio-economic driver of Kanab related to the influx of retirees and others buying property and residences here to be close to outdoor recreational pursuits, scenic beauty, nature study, and the solitude of public lands. The desirability of the community in these regards has supported and escalated real estate value as demonstrated during the real estate and development boom from roughly 2001 – 2007, only stalled or somewhat reversed by the nationwide recession of 2008 through the present.

Virtually all of the residential newcomers to Kanab seek the described benefits of the community and oppose the addition of industrial facilities to the community. Again, local real estate agents have reported that demand for real estate has decreased since the proposal of the Viresco project – 2010 to present. The decline in desirability of the community to new residents, as described, cannot be offset by the potential addition of nine Viresco employees.

These socio-economic impacts are significant. They have been completely ignored in the EA. The EA is deficient in this regard and must be retracted, replaced with an EIS, or at the least, drastically revised.

School and Institutional Trust lands Administration goals & Socio-economic considerations

The EA completely ignored this issue that I raised in my scoping comments. The land on which the proposed site might be built is owned by the School and Institutional Trust Lands Administration (SITLA), which would lease it to Viresco Energy. As such, the leasing of the land is a connected action as defined by DOA in the EA: "A connected action is one that is closely related to DOE's proposed action or Viresco's proposed project, including an action that automatically triggers another action which may require an EA or EIS; an action that cannot or would not proceed unless another action is taken previously or simultaneously; or an action that is an interdependent part of a larger action and depends on the larger action for its justification. (EA, Sec. 2.8. p.21)."

Regarding this connected action issue, then, a proper NEPA analysis must consider that by law, SITLA, as trustee for the school children of Utah "must manage the lands and revenues generated from the lands in the most prudent and profitable manner possible, and not for any purpose inconsistent with the

Responses

Comment 63-10

The subject of this comment has been addressed in the responses to comment numbers 21-03 and 36-06.

Comment 63-11

DOE considers the leasing decision by SITLA to be entirely under the jurisdiction of that state entity.

63-10
(cont'd)

63-11

Commenter 63 – Tracy Hiscock (continued)

**63-11
(cont'd)**

best interest of the trust beneficiaries. The trustee must be concerned with both income for the current beneficiaries and the preservation of the trust corpus for future beneficiaries, which requires a balancing of short and long-term interests so that long-term benefits are not lost in an effort to maximize short-term gains.” (From: TITLE 53C- SCHOOL AND INSTITUTIONAL TRUST LANDS MANAGEMENT ACT. Summarized on SITLA website- <http://trustlands.utah.gov/about/purpose.html>)

The EA failed to consider whether or not this use of school trust lands by SITLA sacrifices long term interests to short term gains and whether or not it is inconsistent with the best interest of the trust beneficiaries. The EA is deficient in this manner, having completely ignored the balancing of long term effects with short term interests. As an education advocate and parent who has served on a school community council empowered with deciding how SITLA funds are spent to benefit local school students, I contend that this use of SITLA land is not in the best interest of the children of this community in terms of public and environmental health; and it sacrifices long term interests (the continued viability of this piece of SITLA land- should the plant be abandoned or expanded after the testing period) to the short term gain (a nominal amount of lease money), to the detriment of all of the schoolchildren of Utah.

Cumulative Impacts/Politics

The proponents of this plant proposal have repeatedly stated that it is nothing more than a small scale research facility. They use this quaint image to sell this proposal as having limited, negligible, or no environmental impacts – no air quality problems, no water quality issues, limited aesthetic blight, etc. The DOE has appeared to adopt the plant proponents’ perspective in the EA, ignoring legally defined “connected actions,” failing to analyze the effects of a potential expansion of the project over a long, undefined time period; and making light of environmental impacts, without scientific analysis.

63-12

Other factors point to the likelihood of this plant only being a first step toward a much larger, more significantly impacting, full scale coal (and other materials) gasification plant. The proposal’s owners, investors, and proponents either own, or have financial interests in significant coal reserves in the controversial Coal Hollow Mine, located about 45 miles north of Kanab outside the town of Alton, where the five tons of coal per day for the testing process at the plant will derive from. They have a strong motive for working to expand the purpose of the plant, as would the advocates and investors in forest products, some of whom are plant proponents as well.

The proponents of this plant currently state that not enough water exists for a large scale operation; yet, many of these same people are actively working to increase water availability in Kanab via the Jackson Flat storage reservoir and the Lake Powell-St. George pipeline. All of these indicators point toward long range planning and cooperation on the part of and between the plant proponents for a larger scale gasification complex. The cumulative impacts of this likelihood also need comprehensive airing and assessment, in every resource area category, addressing all environmental consideration. The DOE’s EA failed to address any of these realities.

63-13

I could offer many other observations and comments on the deficiencies of the draft EA, however, the public has not been given adequate time to thoroughly read and respond to such a confusingly written, analytically unsound and incomplete document.

In conclusion, the EA is deficient for a variety of reasons and should be retracted. It should be replaced with a well analyzed EIS, or at least a completely revised EA to once again be released in draft form for further meaningful public comment.

Thank you for the opportunity to comment. I hope reconsidered NEPA analysis will result, affording me the opportunity to meaningfully comment further on this important matter.

Sincerely,

Tracy Hiscock
1502 S. McAllister Dr.
Kanab, Utah 84741

Responses

Comment 63-12

The subject of this comment has been addressed in the responses to comment numbers 6-01 and 34-04.

Comment 63-13

Comment noted.

Commenter 64 – Victor Cooper

Joseph Zambelli - Comment: Draft EA for Utah Coal and Biomass Fueled Pilot Plant (DOE/EA-1870-D)

From: "Victor Cooper" <rockingv@kanab.net>
To: "Joseph Zambelli" <joseph.zambelli@NETL.DOE.GOV>
Date: 9/16/2011 6:50 PM
Subject: Comment: Draft EA for Utah Coal and Biomass Fueled Pilot Plant (DOE/EA-1870-D)
CC: "Cooper Victor" <rockingv@kanab.net>

Joe

Here are more comments I have on the Draft EA:

64-01

1) 2.5.2 Project Site
"Approximately 0.25 mile north of the site, construction has commenced for the Jackson Flat Water Supply Storage Project, which would consist of the construction of a dam embankment, water supply pipeline, water storage area (i.e. reservoir), and pump station."

Kanab's general plan calls for the area around the Jackson Flats Reservoir to be a recreational area.
Why would the DOE want to fund a chemical plant less than 1 mile from a public recreation area?

"Kanab is planning to develop recreational facilities around the reservoir including three parks, the closest of which would be approximately 0.6 mile to the northeast of the site."

Who in their right mind allows an industrial test facility to be built near a recreational area?

64-02

2) 2.7.3 Products and Waste Generated
"The total ash produced during 30 days of testing would be around 17 tons (26 tons including estimated fines). The ash would be collected, analyzed, and disposed of in an appropriate landfill."

"An appropriate landfill" is not defined. Would this ash be buried in Kanab's existing landfill? How will this affect our groundwater and local well's? Will a separate landfill have to be built to store the ash?

64-03

3) 2.9.2 Transportation and Traffic
"The proposed project would generate a minor short-term increase in personal vehicle traffic due to the hiring of approximately 9 permanent employees. However, the Pilot Plant would not operate on a continuous basis during the year, therefore reducing the number of personal vehicles on

Responses

Comment 64-01

The subject of this comment has been addressed in the responses to comment numbers 13-02 and 24-05.

Comment 64-02

The subject of this comment has been addressed in the response to comment number 15-09. There are several landfills that have the capacity to accept waste from the Pilot Plant; therefore, a separate landfill would not have to be built. No impact to groundwater or local wells would be expected.

Comment 64-03

The Final EA has been updated to explain that 2 of the operational positions would be fulltime annual positions at the Pilot Plant location. The remaining operational positions (7) would be located in Kanab during operational testing of the Pilot Plant.

Commenter 64 – Victor Cooper (continued)**64-03
(cont'd)**

roads and accessing the facility on a day to day basis."

The exact duties of these employees has not been clearly defined. Furthermore, since the plant will not operate on a

continuous basis during the year, it sounds like these jobs will be part time. Will these employees be paid when the

plant is not in operation?

64-04

4) 3.1.1 Existing Conditions

"The Kanab Land Use Ordinance does not include permitted uses that would specifically address the project; however, the most applicable use would be "miscellaneous light manufacturing", which is permitted in the M2 designation."

According to Viresco's own information, this is a test facility and no commercial product will be produced. This plant is not manufacturing anything.

64-05

A conditional use permit was approved by City of Kanab Planning Commission on July 20, 2011 enabling Viresco to exceed height limits otherwise applicable to the Pilot Plant.

Yet the City of Kanab Planning Commission did not specify a height limit for the stack with the flare enclosure and no accurate information has been made available to the citizens of Kanab from the City of Kanab, Viresco or DOE. When questioned about this detail at the EA review, no DOE representative could produce any information about the actual height of the stack with the flare enclosure. DOE representatives actually stated it was not uncommon to approve such projects without knowing such details. This is appalling. Isn't an EA done exactly for this purpose? So residents in the surrounding community will know what is being planned. DOE seems perfectly happy to not fill in the details since this was a Congressional earmark.

64-06

5) 3.9.2 Environmental Consequences of the Proposed Project

"Should a spill happen it would immediately be reported to the jurisdictional authorities and technically qualified HAZMAT responders shall be hired for the cleanup. These firms shall be notified of the Pilot Plant's needs in advance of construction and shall be secured under contract to respond in the event of a spill in a timely and professional manner (Viresco Energy, LLC, 2010)."

"a timely and professional manner"? How, exactly is this defined? This information was provided by Viresco. Is there independent verification of this capacity to respond to a major accident?

Responses**Comment 64-04**

DOE considers land use planning and zoning decisions to be under the jurisdiction of the Kanab City Planning and Zoning Department. That department determined that the Pilot Plant is consistent with the zoning designation of the site and the master plan.

Comment 64-05

As stated in response to comment number 51-07, the wording on page 1 of the conditional use permit authorizes a 60-foot tall gasifier with a 67-foot tall exhaust structure "plus the additional height of required and approved flare enclosures". The Final EA has been revised to clarify these dimensions. The maximum height of the exhaust flare structure, including the enclosure structure, would be approximately 72 feet. It is not unusual for specific details of a final design to be undetermined during the planning stage of a project, which is when environmental studies under NEPA are completed. Therefore, impacts may be based on reasonable assumptions about design conditions and would remain valid provided that the final design does not substantially alter the assumptions and introduce new impacts. In the case of the flare enclosure, the exact size and resulting effect on the height of the flare exhaust structure is not known with certainty. DOE has determined that the enclosure may add approximately 5 feet to the height of the flare structure with a margin of uncertainty amounting to a few feet, which would not substantially alter the visual impact of the structure.

Comment 64-06

Viresco would develop a SPCC plan, which would outline the procedures and training needed to respond to a spill, so any accidental releases would be cleaned prior to groundwater contamination. Because only small amounts of petroleum products would be stored at the Pilot Plant site for mechanical repairs, any onsite spills would be small and localized. The spill response would include immediate absorption of the liquid, and removal of the contaminated soil. The federal government enforces the SPCC rules through onsite inspections of facilities by EPA personnel.

The responses to comment numbers 43-07 and 35-06, respectively, address the subjects of public safety and site restoration.

Commenter 64 – Victor Cooper (continued)**64-07**

6) 3.10.2.1 Population and Housing

"During construction, approximately 25 construction jobs would be created as a result of the project. It is assumed that the majority of the workforce would be drawn from local candidates; therefore, no increase in population or need for housing is anticipated."

Earlier in the EA, the figure of 30 construction jobs was used. Which is it? Also why is it assumed the jobs will be local. Many of the required applications are specialized and that level of expertise is not available in the Kanab area

64-08

7) 3.10.2.3 Economy and Employment

During construction, regional economic activity would increase as local construction contractors and construction firms are hired for the project. The purchase of building materials, construction supplies and construction equipment, as well as spending by the construction workers, would add income to the economy. Twenty-five construction jobs would be created as a result of the project. This would have a short-term, minor beneficial impact on employment in the Kane County area. During operations, daily spending by employees would positively affect businesses in the area. These expenditures commonly include gasoline, automobile servicing, food and beverages, laundry, and other retail purchases undertaken in the immediate area because of convenience and access during the course of the business day. In addition, secondary jobs related to the increased economic activity stimulated by the project may also be created. This would have a minor beneficial impact on employment in the Kane County area; as relatively few (nine) operational employees would be required.

The line states "during operation". Nine employees, even if ALL are local, which they will NOT be, according to Viresco will have minor positive impact on this economy, versus people who will move from Kanab if the plant is allowed to be built. Not to mention people who will not move here. People come to Kanab to see the vast landscape and to escape the polluted air of the cities they live in. This plant, in no way benefits the residents of Kanab or Kanab's major source of income which is tourism. the assumption that 9 workers doing LAUNDRY once a week will have an economic impact is absurd.

8) 3.10.2.3 Economy and Employment

"Development of the Pilot Plant would create nine new jobs in the Kanab and Kane County area in the high-wage service industry (engineering). Considering that the major employers in Kane County include Best Friends Animal Sanctuary, Aramark (Lake Powell Resorts), Kane County Hospital, Kane County School District, Kane

Responses**Comment 64-07**

The subject of this comment has been addressed in the responses to comment number 54-05. Section 2.6 states that up to 30 construction workers would be required at the site at any given time. It is estimated that during construction 25 construction workers will be needed and the number of construction workers would not exceed 30.

Comment 64-08

The Draft EA appropriately considered the small number of operational jobs that would be associated with the proposed Pilot Plant to represent a minor beneficial impact. Economic input-output studies consistently demonstrate that spending for commercial and public works projects results in multiplier effects from indirect and induced employment. With respect to the potential adverse impacts on tourism and on the influx of new residents, the responses to comment numbers 21-03 and 36-06 address the same issues.

Commenter 64 – Victor Cooper (continued)

County Government, and the Federal Government (Economic Development Corporation of Utah, 2011), development of the Pilot Plant would help diversify the existing local service industry. A more diverse local service economy could help leverage Kanab and Kane County's proximity to nearby protected public lands (e.g., Grand Staircase-Escalante National Monument) into further diversification and overall economic growth."

According to Viresco's own admission, only 4 or 5 jobs would be filled by local hires. These jobs would be routine maintenance/handyman jobs and perhaps a forklift operator. These are NOT high paying engineering jobs. Those jobs would go to Viresco employees from out of state, not to local workers.

**64-08
(cont'd)**

9) 3.10.2.2 Taxes and Revenue
"Additional retail services and business employment may result if employees relocate to the area through a multiplier effect, yielding additional sales and income tax revenues for local and state governments. Also, operation of the facilities would require the purchase of supplies, equipment, and services in the local area, benefiting local businesses and increasing tax revenue."

"Additional retail services and business employment may result..." This claim is specious at best. It assumes that ANY business, no matter the negative impact, may possibly create additional revenues by merely being open. It is the same as saying "tourism may increase if live dinosaurs are discovered in the Kanab area."

64-09

In conclusion, I find this EA to be poorly researched and substantiated and call for a detailed review of the claims made in this EA.

Thank you for your time.

Sincerely,

Victor Cooper
976 W. Vermillion Dr.
Kanab, UT 84741

Responses

Comment 64-09

Comment noted.

Commenter 65 – Victoria C. Cooper

Joseph Zambelli - Kanab/Viresco

From: "vicky cooper" <msvickster@yahoo.com>
To: "joseph.zambelli@netl.doe.gov" <joseph.zambelli@netl.doe.gov>
Date: 9/16/2011 6:27 PM
Subject: Kanab/Viresco

Dear Mr. Zambelli,

Thank you for your willingness to listen to my concerns regarding the proposed Viresco coal gasification plant Jim Guthrie wants to locate in Kanab, two miles from my home and business. However, I do not feel the Department of Energy answered my concerns.

This plant is wrong for Kanab on many levels.

65-01

Whether the city council admits it or not, Kanab is a tourist community. Tourism accounts for the bulk of our tax base. Tourism will be severely negatively affected by the smell of burning coal, rubber and human waste that will be emitted from this plant, directly upwind from Kanab. As I explained in my last letter, I own a small business that employs 26 people. If you allow Viresco in, tourism, including my business could be harmed. 26 people could lose their jobs at my business alone. The six jobs that Viresco promises as night watchmen will not replace the jobs that it will kill. Who buys my employees' houses when they are forced to move? There will be no economic benefit to Kanab to allow Viresco to locate here. Our city manager, Duane Huffman, has gone on record to admit that.

65-02

My home is directly in the wind pattern of the proposed Viresco plant, which would be next to the new jail and reservoir. Already the noise from road-paving and big machinery finds its way to my house and disturbs the serenity of my home. I dread air pollution that will start floating toward my home, affecting my allergies and asthma. Our hospital is not equipped to handle emergencies, nor many common ailments. Emergencies are simply airlifted out. For example, a local woman died Friday, after being airlifted to Las Vegas, because local doctors do not have the facility to diagnose problems such as hers, a perforated ulcer. We simply cannot afford to further risk the health of our people. The DOE claims there will be 'no significant impact' to Kanab's air or water, yet provides no proof of either. I think we need a full environmental impact study performed to prove the facts.

65-03

This issue has caused a terrible controversy and rift in our community. Citizens are suing the city for changing zoning to fast-track the plant. A citizens' initiative has been placed before city council so we can vote on such things. There is also the issue of disturbing Native American burial sites. That is simply wrong.

I personally am opposed to spending tax dollars on coal gasification at a time of serious global warming. We should spend our research dollars on renewables such as solar, wind and wave energy production. If coal gasification is such a great idea, why does Mr. Guthrie not locate his plant in Riverside, California? Riverside has decided it does not want more air pollution. How about Washington, D.C.?

Mr. Guthrie puts up \$600,000. DOE grants him \$2.4 million. Not a bad return on investment. However, it appears to me this is another case of someone getting rich off the taxpayer. We see far too much of that, particularly in these times of serious federal economic woes. This is a good place to save the treasury some cash. How much is this fight costing taxpayers? For you and your team to come to Kanab to conduct meetings, to prepare reports? Is this part of the \$2.4 million?

Responses

Comment 65-01

The subject of this comment related to tourism and housing value impacts has been addressed in the response to comment numbers 21-03 and 36-06.

Comment 65-02

The subject of this comment has been addressed in the response to comment number 13-01.

Comment 65-03

Comment noted. The subject of the comment relating to why the proposed project is to be located in Kanab has been addressed in the response to comment number 8-01.

Commenter 65 – Victoria C. Cooper (continued)**65-04**

Finally, I ask you to go back and re-read my initial letter and address my concerns. I think the DOE should conduct a full environmental impact study before allowing Viresco to proceed with its plans. It appears air quality issues and water quality concerns were not seriously addressed. Mr. Guthrie publicly stated he refuses to build scrubbers on his stacks to remove odor and pollution from smoke. There is no one in Kanab with the expertise to inspect the plant as it is being constructed. An outside inspector would need to be brought in to watch over every aspect of construction. Who would pay for that? Not Mr. Guthrie, not Kanab. Who will monitor air quality? Guthrie says it is up to the state. The nearest air quality monitoring official is in Salt Lake City, five hours away. And what happens to the "recycled" water that Viresco uses? The evaporation pond? What if we have a flood and contaminated water makes its way into the Colorado River, affecting millions of people downstream? Who will pay to clean it up? The recent DOE "no significant impact" report also fails to address my concerns about possible explosions or fires at the plant. We have no infrastructure to deal with such emergencies. And we have no understanding of who pays for any of these problems. What happens to the Viresco plant after its use expires? Who pays to dismantle it? Again, not addressed.

It appears there are too many unanswered questions for the DOE to move forward with this grant request from Mr. Guthrie. I ask you to please give more thought and study before approving the Viresco plant. I have contacted my U.S. senators and congressmen to alert them to the various problems as well. Thank you for your time.

65-05**65-06****65-07**

Sincerely,
Victoria C. Cooper
976 West Vermillion Drive
Kanab, Utah 84741

Responses**Comment 65-04**

The subject of this comment has been addressed in the responses to comment numbers 12-01 and 51-02. Section 2.9.3 Surface Water has been removed from Chapter 2.9 "Resources Not Considered in detail" and has been moved to Section 3.12 and includes a more in-depth analysis. Air Quality and Climate are discussed in detail in Section 3.5.

Comment 65-05

The subject of this comment has been addressed in the responses to comment numbers 9-01, 15-05, 40-27, and 56-15.

Comment 65-06

The subjects of this comment have been addressed in the responses to comment numbers 43-07, 4-01, 15-06 and 26-13.

Comment 65-07

The subject of this comment has been addressed in the response to comment number 8-01.

Commenter 66 – William Booker

UTAH COAL AND BIOMASS FUELED PILOT PLANT EA
LOCATION: Kanab, Utah

Dear Mr. Zambelli:

The following are my comments on the draft UTAH COAL AND BIOMASS FUELED PILOT PLANT EA, which analyzes impacts of a project proposed to be located in Kanab, Utah. Thank you for writing an EA instead of using a Categorical Exclusion to assess this project and holding public meetings in Kanab.

Comments:

66-01

I do not think the No Action and Proposed Action represent a reasonable range of alternatives. This plant could be sited in Carbon County where coal mining is the major industry. I have been told that people in Carbon County want this facility. It would probably be more efficient to locate it there rather than a remote town with limited support facilities and a long haul to get coal to the site.

Section

3.10.2.3 Economy and Employment

I agree with the work done by the Sonoran Institute. Yes, a balanced economy is desirable and protected public land can be important in attracting businesses hiring an educated workforce and paying wages higher than service jobs related to tourism. However, the project will not do this because it is proposed to be temporary. Employees will spend money in local businesses and on rent, but unlikely buy housing or settle in Kanab permanently. In fact, the plant could have the opposite effect of discouraging industries from locating here that would otherwise be attracted by protected public land and other current amenities defining Kanab. Location of this facility in Kanab has nothing to do with the abundance of protected public land in the area, except possibly hoping remoteness and receptive small town local government would facilitate the project.

66-02

The attraction of protected public land (and there are many within a 25 mile radius) by tourists provides a major segment of the local income. There are on average 3,000 visitors in Kanab during the extended tourist season. These people do not have to stay in Kanab. Any perception of industrialization in Kanab could adversely affect the tourist economy by losing tourist dollars to other communities. This is an impact that needs to be addressed.

A significant portion of the non-tourist economy is based on resident retirees. I have been told by many retirees, and I feel this way myself, that if the plant is built (taken in the context of other recent projects and local government actions) they will leave Kanab and relocate elsewhere. This would also be an element discouraging future retirees from locating in Kanab. This could represent a significant impact on both the economy and property values. Again, it should be addressed in a rigorous analysis.

Kanab is a rare place in 21st Century America with its clean air, beautiful location, small town atmosphere, yet with sufficient amenities (movie rental and pizza delivery) to make life comfortable. The proposed project does not fit here now and could have significant adverse impacts on future growth options for Kanab. I believe these negative impacts will be irreversible or irretrievable for Kanab once the proposed facility is located here.

66-03

Judging the controversy about this project generated among the citizens of Kanab (and local citizens located outside Kanab) I believe the proposed project qualifies for and requires the more intensive analysis afforded by an Environmental Impact Statement.

Again, thank you for your efforts.....please take our concerns seriously

William Booker

Responses

Comment 66-01

The subject of this comment has been addressed in the response to comment number 8-01.

Comment 66-02

The subjects of this comment have been addressed in the responses to comment numbers 8-01, 21-03, 36-06, and 59-12.

Comment 66-03

The subject of this comment has been addressed in the responses to comment numbers 12-01 and 51-02.

Commenter 67 – Larry Crist (USFWS)



United States Department of the Interior

FISH AND WILDLIFE SERVICE

UTAH FIELD OFFICE
2369 WEST ORTON CIRCLE, SUITE 50
WEST VALLEY CITY, UTAH 84119

September 22, 2011

In Reply Refer To:
FWS/R6
ES/UT
11-CPA-0082

U.S. Department of Energy
National Energy Technology Laboratory
Attn: Joseph Zambelli
3610 Collins Ferry Road
M/S: B07
P.O. Box 880
Morgantown, WV 26507-0880

Re: Draft Environmental Assessment for the Utah Coal and Biomass Fueled Pilot Plant Project

Dear Mr. Zambelli,

We reviewed the subject draft environmental assessment (EA) prepared by your office to evaluate the potential impacts of a cooperative cost-share agreement with Viresco Energy, LLC for the design, construction and testing of a pilot-scale gasification process facility. We submit the following comments for your consideration.

The proposed project lies within low desert scrub habitat which may support foraging, nesting and sheltering habitat for migratory birds, including raptors. The Migratory Bird Treaty Act (MBTA) prohibits the take of migratory birds, their parts, nests, eggs, and nestlings. To ensure compliance with the MBTA, you should assess potential impacts to migratory birds and establish measures to avoid the "take" of an active nest or migratory bird. We recommend that any unavoidable vegetation clearing and surface disturbance be conducted outside migratory bird breeding, nesting, and fledging seasons. You should evaluate short- and long-term impacts to migratory bird habitat in your EA, focusing on species on the U.S. Fish and Wildlife Service 2008 list of Birds of Conservation Concern and those identified in the Utah Wildlife Action Plan (UDWR 2005). Finally, mitigation should be developed to fully compensate any unavoidable habitat losses and to conserve these species in the long term.

We recommend the use of the *Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances* (Romim and Muck 2002) to provide consistent application of raptor protection measures and full compliance with environmental laws regarding raptor protection.

67-01

Responses

Comment 67-01

The EA has been revised to include a more in-depth analysis of Biological Resources, including seasonal land clearing restrictions as a migratory bird and raptor protection measure (see Section 3.11).

Responses

Commenter 67 – Larry Crist (USFWS) (continued)

67-01
(cont'd)

The Guidelines provide raptor survey protocols and mitigation measures to help ensure that proposed projects will avoid adverse impacts to raptors. For example, you should identify locations of existing raptor nests prior to the initiation of project activities and establish appropriate spatial buffer zones of inactivity during crucial breeding and nesting periods. Certain raptor species can arrive at nesting sites as early as December. Nesting and fledging activities can continue through August.

Please note that we removed the bald eagle from the federal list of endangered and threatened species. While bald eagles no longer are provided protection under the ESA, they are still protected under the Bald and Golden Eagle Protection Act in addition to the Migratory Bird Treaty Act.

We appreciate the opportunity to provide these comments. For further assistance, please contact Amy Defreese, Ecologist, at the letterhead address or (801) 975-3330 x128.

Sincerely,


Larry Crist
Utah Field Supervisor

cc: UDWR – Cedar City (Attn: Bruce Bonebrake)
DOI, OEPC – (Robert F. Stewart) (by email)

References

Romin L. and J. Muck. 2002. U.S. Fish and Wildlife Service. Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances.

Utah Division of Wildlife Resources. 2005. Utah Comprehensive Wildlife Conservation Strategy. Utah Division of Wildlife Resources, Salt Lake City, UT.

Responses

Comment 68-01

Comment noted.

Commenter 68 – U.S. Representative Jim Matheson

From: "Martin, Ashley" <Ashley.Martin@mail.house.gov>
To: "joseph.zambelli@netl.doe.gov" <joseph.zambelli@netl.doe.gov>
Date: 9/20/2011 5:16 PM
Subject: Utah Coal and Biomass Fueled Pilot Project, Kanab, UT
Attachments: Alexander letter.docx; Beesley letter.docx; Bill Barnes letter.docx; Booker letter.docx; Carter letter.docx; Cooper letter.docx; Csenge letter.docx; Decker letter.docx; Henley letter.docx; Hoveman letter.docx; Jacobs letter.docx; Kaczowska letter.pdf; Marlene Barnes letter.docx; Pecora letter.docx; Shelton letter.docx; Thatcher letter.docx; Woods letter.docx; 091811 Barth Draft EA comment letter FINAL 09182011.pdf

Dear Mr. Zambelli,

We understand that last week the public comment period for the draft EA for the Utah Coal and Biomass Fueled Pilot Plant Project in Kanab, UT closed. We were contacted by a number of our constituents who submitted comments, but wanted to be sure that they were received in time. In addition, we had a few constituents who missed the deadline entirely. In speaking with your colleague Mr. Paul Detwiler last week, he had indicated that DOE would still accept a few late comments. As such, we have gathered copies of these comments from our constituents and attached them to this email. Again, some you may have already, but we just wanted to be sure they were received and hope they can be considered as part of this process. We may have one more batch to send along early next week.

Thank you in advance your consideration and efforts on this project. Please let me know if I can answer any questions.

Sincerely,

Ashley Martin
Senior Legislative Assistant
Rep. Jim Matheson (UT-02)
2434 Rayburn HOB
Washington, DC 20515
Phone: 202-225-3011
Fax: 202-225-5638

Sign up for Congressman Matheson's e-newsletter: www.house.gov/matheson <<https://owa.house.gov/owa/UrlBlockedError.aspx>> [cid:image001.jpg@01CC77AC.52237F00] <<http://www.facebook.com/RepJimMatheson>> [cid:image002.png@01CC77AC.52237F00] <<http://www.youtube.com/repjimmatheson>> [cid:image003.jpg@01CC77AC.52237F00] <<http://twitter.com/repjimmatheson>>

68-01

Commenter 69 – Bill Barnes

Mr. Zambelli:

69-01

Since the winter of last year I have spent literally hundreds of hours attending planning and zoning meetings, city council meetings and concerned citizen meetings. I have read, researched and written letters to our local newspaper and to the DOE. I have donated money and a great deal of additional time to committees that have sought to educate the public about this proposed project. All along I have had faith that the city, county, state and federal governments actually care what I think and what my very real concerns are. BUT, after reading every word of this "Draft Environmental Assessment" document, I now know that every decision maker involved in this process has an agenda to build this pilot plant and that each and every governing body is under pressure to push this project, even if they were to know that every single person in Kanab was against it.

69-02

Significant parts of 2 paragraphs from this document show the motivation behind the "no impact" findings of the DOE. I feel that by having no other location as a viable alternative, these paragraphs clearly show that the DOE is under pressure to find a way to get this facility built.

2.4 No Action Alternative (p. 9) (Defines "No Action")

... A No Action Alternative is considered in this EA and provides a **benchmark** (which means a standard for judging), enabling decision-makers to compare the magnitude of environmental effects of the Proposed Action. Under the No Action Alternative, DOE would not provide funding for the construction and operation of the Pilot Plant... [therefore] the proposed project would not be undertaken...

3.5.3 Environmental Consequences of the No Action Alternative (Page 46) (This plant is part of a larger agenda.)

...No-Action ... would delay planned steam hydrogasification projects by perhaps several years. The increased understanding of feedstock conversion to clean, high-energy fuel sources would not be gained, nor could an example of successful and safe steam hydrogasification, on any scale, be offered to the public in support of a larger, more expensive project...

As for the document in general, here are my thoughts:

69-03

Throughout the entire document, terms like no [toxic spills] are "anticipated", no [industrial accidents] are "expected", no [seepage of waste waters into our water supply] "is likely" are used to dispel our very real fears about industrial accidents, toxic spills, accidental contamination of our ground / drinking water, contamination of our waste water containment ponds, air pollution, etc. So I suppose we are to believe that everything about this plant is going to be just hunky dory. And who is going to be in charge of monitoring actual levels of air pollutants, possible spills, and a myriad of other emergencies that could occur at this site? Why, Viresco, of course!

69-04

In addition to environmental dangers, the Paiute Nation is very concerned about the disturbance of human remains or the destruction of culturally significant artifacts while building this facility. Again, we are being told that such occurrences are unlikely, even though the same scenario was unlikely at Jackson Flats, and yet it occurred. And who is going to be in charge of recognizing and preserving possible discoveries of human remains and cultural artifacts? Why, Viresco, of course!

69-05

After all, Viresco and the city of Kanab have been entirely open and forthcoming about this project until this point, haven't they? Or did they forget to mention that this 30 day pilot plant will likely be expanded to a 130 day plant that will run tests 24/7 for up to 90 days in a row? With the expansion of the plant, did they forget to mention that tons of ash will be disposed of in our landfill? Or did they forget to mention that the wastewater from this expanded plant will like be put into our sewer ponds? Or did they forget to mention that the permitted flare stack now has no specific height, so it will at least be 67 feet high, but the upper limit has not been established? Or did they forget to mention that Viresco has a 30 year lease on this property and that Viresco is

Responses

Comment 69-01

Comment noted.

Comment 69-02

Comment noted.

Comment 69-03

The subject of potential impacts from groundwater contamination is answered under comment 32-07. U.S. EPA regional personnel enforce the SPCC rules through onsite inspections of facilities. The response to comment 43-07 addresses the potential effects of a potential catastrophic accident.

Comment 69-04

The subject of this comment has been addressed in the responses to comment numbers 24-07, 34-07, and 56-10.

Comment 69-05

The subject of this comment regarding the use of the Kane County Landfill has been addressed in response to comment number 15-13; The subject of this comment regarding the use of the City of Kanab's wastewater system has been addressed in response to comment number 15-25; The subject of this comment regarding the height of the proposed flare stack has been addressed in response to comment number 81-05; The subject of this comment regarding decommissioning has been addressed in response to comment number 57-07; The subject of this comment regarding surface water has been addressed in response to comment number 65-04; The subject of this comment regarding health and safety has been addressed in response to comment number 43-07; The subject of this comment regarding the residents in Fredonia has been addressed in response to comment number 15-07.

Commenter 67 – Bill Barnes (continued)

**69-05
(cont'd)**

only required to restore the land to its former condition at the end of 30 years? Or did they forget that the Jackson Flats Reservoir is only ¼ mile away from this plant and that a spill or other disaster could very well pollute this water? Or did they forget to consider the health and safety of the 200 inmates who will be housed in the "Kane County Safety Facility" only ¼ a mile from this plant? Or did they forget to consider that the residents of Fredonia, AZ also live in even closer proximity to the facility than the people of Kanab?

69-06

I feel that my concerns and questions were simply glossed over and that the answers that the DOE gave did not adequately address my main concern, which was and still is the possible contamination of ground water and the drinking water supply, plus the real danger of industrial mishaps. I want a more thorough EIS to

69-07

examine the project more closely, taking into consideration all of the points that I have addressed along with the points raised by others both tonight and in the follow-up written comments. This project is wrong for Kanab, and I insist on being given a voice in this matter.

Sincerely,
Bill Barnes

Responses

Comment 69-06

As stated in Section 3.6.1, the primary drinking water supply for Kanab is the Navajo aquifer, which is extracted 300 to 700 feet below ground surface, from wells that are located north of the city. At the project site, it is estimated that there is no groundwater within 100 feet of the ground surface. Although the Coconino-De Chelly aquifer is present beneath the Pilot Plant site, it is extremely unlikely that any chemical spill from the project would infiltrate over 100 feet of soil and bedrock before it was cleaned.

Comment 69-07

The subject of this comment has been addressed in the responses to comment numbers 12-01 and 51-02.

Commenter 70 – Catherine Ives

From: Claire [mailto:claire@xpressweb.com]
Sent: Tuesday, September 20, 2011 3:26 PM
To: 'joseph.zambelli@NETL.DOE.GOV'
Subject: Response to EA Document

Hi Joe:

During meetings several people said that this plant does not fit into Kanab as a community. That sounds a bit vague. I'd like to make this idea more concrete.

First: the city council and city planning commission. Our city council and city planning commission members are not professionals. They are residents of Kanab who have been elected or sometimes assigned to those posts. Kanab has one professional staff, a city manager. The city manager seems at a loss as to what to do about a manufacturing plant within our city limits. At a meeting I attended where issues of possible reclamation were mentioned in case something should go wrong...say Viresco going out of business... he could only refer to perhaps a supermarket being half built. A city council member had to point out to him that a supermarket would hardly leave dangerous substances on the site which would have to be cleaned up which could be a very costly project.

The city planning commission worked for nine months on a conditional use permit for the plant in conjunction with an engineering firm hired for the purpose and finally gave up granting a CUP to Viresco even though the height of the smokestack at the time was still unknown due to the unknown size for the flare assembly. There was also a vague mention of the reclamation issue and the need for a bond which would be another conditional use...totally unresolved. The commission granted the CUP anyway. They were obviously by now in a hurry. Important issues were left unresolved.

When a proposed new land use ordinance suggested that a special inspector for the plant be hired by the city ...someone familiar with high heat plant components...one of the city council groused that it would cost too much to hire such an inspector that it couldn't be covered by the city budget. And yet obviously such an inspector would be badly needed.

70-01

Responses

Comment 70-01

The subjects of this comment have been addressed in the responses to comment numbers 15-17, 15-06, 15-04, and 43-07.

Commenter 70 – Catherine Ives (continued)

**70-01
(cont'd)**

So: amateur city government not qualified to oversee an experimental factory in Kanab involving dangerous substances and possibly dangerous components such as gassifiers operating at very high temperatures.

As I said in my comments at the recent DOE meeting the trouble with the EA is that it assumes normal operation of the plant. However plants often don't operate normally. This will be an experimental plant. Industrial accidents are very common. That's obvious. Just the other day there was an explosion at a nuclear power plant in France. During the recent earthquake in VA a 40 year old nuclear power plant was shaken so violently that it's not clear whether the plant should be permanently shut down. The company is now in court vs the state of VA. I could go on...

70-02

The EA states that the Kanab Fire Department is fully staffed. However it is mostly a volunteer fire department. That is, it has one paid career firefighter, the Chief. The department works very hard to train and to be able to handle any situation currently in Kanab. So far these include house fires and rolled over tanker trucks on the roads, etc. Whether the fire department could handle an explosion or fire at the proposed plant or some other circumstance remains to be seen. What would bother me the most would be the accidental release of a cloud of pollution from the stack. Do we want to build this plant and then find out what could go wrong?

There was a brush fire recently not too far from the plant site. If a brush fire should get into the plant yard there would almost certainly be an explosion of the coal dust.

Kanab has a small hospital. It is really little more than a first aid facility. Local mothers who can afford it tend to have their babies at Dixie Regional Medical Center in St. George. That's because if anything should go wrong during labor they would have to be life flighted to St. George anyway. The nearest burn unit is at the University of UT hospital in St. George or in Las Vegas, NV. Specialist MDs are all in either ST. George, Salt Lake City or Las Vegas. Some specialists visit the hospital once a month. That's the price residents of Kanab pay for living in their quiet little town. Residents do a lot of driving to see the specialist doctor or dentist!

If there should be a fire or other accident at the plant what would happen to the people working there or firefighters operating there? We don't know.

So with normal operation this plant might be ok. But what if something goes wrong? If this plant is built... as I said before... we the residents of Kanab will all be guinea pigs. Is this worth it to the residents of Kanab for 9 jobs and so Viresco can sell this process in China? Obviously not.

That is why this plant does not fit into Kanab. Kanab doesn't have the resources to handle it in a safe way. Plain and simple. No talk of "aesthetics" or "socio economics". Just plain facts.

Thank you,
Catherine Ives
Kanab UT

Responses

Comment 70-02

The subject of this comment has been addressed in the response to comment number 43-07.

Commenter 71 – Caralee Woods

Mr. Joseph Zambelli
NEPA Documents Manager

Dear Joe,

Thank you for considering my following comments regarding the Draft EA for the Utah Coal and Biomass Fueled Pilot Plant (DOE/EA-1870).

My earlier letter sent after the initial public hearing in Kanab, UT, is the reference for the concerns listed below.

2.7.2-3 FACILITY PROCESSES AND EQUIPMENT

Regarding feedstocks, you say "...it would need to be provided certain feedstocks consisting of..." but you do not specify those feedstocks. More information is required to support your further statements. What feedstocks will be used? Old tires? Wood chips? Roadkill? I'm not trying to be funny here; we need to know what plans the owner has for trying out various sources that might create not only odors, but concentrated toxins.

71-01

Regarding products and waste generated, you say that the coal ash will be "...disposed of in an appropriate landfill." What makes the landfill appropriate? Proximity? Could the ash be disposed of in our nearby landfill? Or will it be put in barrels and shipped to a place where the related toxins will be mitigated? We need much more information here.

71-02

2.9.3 SURFACE WATER

I am surprised that you say "There are no catalogued lakes or reservoirs in the drainage basin." In fact, within a stone's throw you will find Jackson Flat Reservoir, just downhill of the Pilot Plant. Any water runoff is likely to find its way almost immediately to that reservoir which will be used for agricultural irrigation, thus finding its way into the food chain.

71-03

3.1.1 EXISTING CONDITIONS AND ENVIRONMENTAL CONSEQUENCES

You state that "...Viresco submitted an application to the City of Kanab to re-zone the 10-acre property from RR-1 (Very Low Density Residential) to M2 (Light Manufacturing)..." Actually, the rezone was from Agricultural Zone, not RR-1. Please correct this fact.

71-04

3.1.2 ENVIRONMENTAL CONSEQUENCES

You point out that "Use of this site for an industrial facility (the Pilot Plant) would not be considered compatible with recreational sites, such as parks, primarily due to diminished aesthetic quality." This is true, and yet you go on to say that this plan, which has been in the works for years, is only conceptual and can be changed to accommodate the Pilot Plant's siting. Where did you get this information? Because the recreational area by definition will surround the reservoir, it cannot be moved very far. No matter what, the "aesthetic quality" of the reservoir

Responses

Comment 71-01

The subjects of this comment have been addressed in the responses to comment numbers 6-09 and 15-09.

Comment 71-02

As stated in response to comment number 15-16, because the Jackson Flat Water Supply Storage Project has not been completed, there is no impoundment; hence, this future water body has not been cataloged by the state. Potential cumulative impacts to this reservoir are discussed in Section 4.2.

Comment 71-03

The Final EA has been revised in Section 3.1 to show the correct original zoning category applicable to the SITLA property.

Comment 71-04

The subject of this comment has been addressed in the responses to comment numbers 13-02, 24-06, and 33-02.

Commenter 71 – Caralee Woods (continued)

**71-04
(cont'd)**

and any future parks will be greatly diminished. Please give more information regarding the compatibility of the plant with the future recreational enjoyment of the reservoir and surround parks. Quotes from city leaders would be entirely appropriate here.

3.5.2 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED PROJECT

After listing air qualities in the region, describing Class 1 areas, etc., you summarize that "short- and long-term minor adverse effects on air quality would be expected from the proposed project." This entire section is grounded in the assumption that emissions from the plant will produce no ill effects on human health because the levels are low. The problem with this is the logic that "a little pollution is acceptable." I realize that my objection to this is slightly less than scientific, but must state nonetheless that because a little pollution is acceptable to someone, it is not acceptable to everyone. And I cite again the 2009 seminal article by Annette Peters in CIRCULATION: Journal of the American Heart Association that points out that "guidelines set to protect healthy normal individuals may not be adequate for vulnerable populations." The fact that 20% of Kanab residents are over 65 years of age, making it particularly susceptible to negative changes in air quality, has been entirely ignored in your EA. The fact that air quality in the region of Kanab is very clear is no excuse to make it less so and to ignore facts that may be, as the man says, "inconvenient."

71-05

Further, there does not appear to be any real analysis other than the charts you pulled from other sources. What will happen in KANAB? None of the levels of CO, NO₂, SO₂, and PM₁₀ are measured here, or apparently anywhere in Southern Utah, so I am confused as to what real analysis was done of the Pilot Plant's expected emissions. Please revisit this.

At the last public meeting, I spoke with Darryl Shockley, the Project Manager of this plant. I asked him who/what would be monitoring this plant's emissions. He seemed surprised by the question, and then guessed that the EPA would be responsible. I asked him to guess again, and he had no clue that in fact the Utah DAQ and DEQ would be asking Viresco to keep records and report its own emissions and stored toxins. This may be common practice for small source polluters, but that does not make it acceptable. Nor is the monitoring process for the plant discussed anywhere in the Draft EA.

71-06

3.8.1 EXISTING CONDITIONS

I am curious about Garkane Energy being the provider of large amounts of propane to the plant. There are several propane providers in the area, including Amerigas. Why is it assumed that Garkane will be the provider of propane vs. other companies?

71-07

3.9.2 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED PROJECT

Noise issues are addressed here, and limited largely to noise created by the construction of the plant. However, the City of Kanab is requiring that the flare stack have a structure that will enclose the flare and mitigate the visual and, it is said, odor of the flame. However, my research indicates that the enclosure might well have the effect of a resonating chamber for the sound of the burning flame. Please address the effects of sound magnification when an enclosure surrounds the flame.

Responses

Comment 71-05

The subject of this comment has been addressed in the responses to comment numbers 21-02 and 32-05.

Comment 71-06

Propane is a commercially available commodity resource. The decision regarding the choice of a supplier was made by Viresco based on market factors and availability.

Comment 71-07

Noise levels from the flare would depend on the final design, which is unknown at this time. However, as discussed in response to comment 54-08, DOE expects that the design would take into consideration any OSHA regulation to protect workers and the public. Per OSHA standards, the maximum acceptable noise level for any continuously noise-generating equipment is 90 dBA (29 CFR 1910.95). Assuming a worst-case sound level of 90 dBA at the Pilot Plant fence line, it is estimated that at a half mile from the property, the sound level from plant equipment would be less than 50 dBA, which is considered relatively quiet. The flare enclosure is expected to reduce sound levels further and the actual sound level of the flare would likely occur at levels that are imperceptible by the closest residential receptor, over half a mile away.

Commenter 71 – Caralee Woods (continued)**3.10.2.2 - 3 ECONOMY AND EMPLOYMENT**

You say that existing structures in the general area (Landfill, communication towers, jail, etc.) "...are already visible from the same locations and have not detracted from regional tourism." What information do you have to support that statement? You frequently cite the Sonoran Institute report, and specifically that diverse economies with an educated workforce are in the best positions to take advantage of nearby protected public lands from an economic standpoint. That point is not well explained. However, you go on to point out that "the greatest source of real income growth has been non-labor income (e.g. investment income often associated with retirees)..." You then say that what the Pilot Plant represents is good, higher wage white-collar service industry. You cite that the Pilot Plant "...would create nine new jobs in the Kanab and Kane County area in the high-wage service industry (engineering)." Actually, on p. 62 you say that five of the nine employees would be Viresco employees—presumably the engineers. The other four would be contract employees; Guthrie has noted that he will need a forklift operator and one or two night watchmen. The other one or two employees are left undescribed. I am doubtful that the forklift operator and night watchmen will be making high salaries. So, as you say, "negligible impacts on population and housing would be expected." The far reach that additional jobs in the service industries around Kanab will be created by the purchasing power of these five engineers is doubtful. However, if you can prove that multiplier effect, I would like to see that done in the final EA. Further, you state that "During operation, taxes would begin to be paid on the property..." In fact, because the Pilot Plant will be located on SITLA land, owned by the State of Utah, not one penny in property taxes will be paid to the City of Kanab. Please correct that statement and also consider why such an assumption was made without checking with anyone in the city government who could have corrected the error before going to print.

71-08

4.2.4 CULTURAL RESOURCES

You say "If any human remains are discovered, then such a discovery could be viewed as a cumulative impact of the projects." I strongly expect that if evidence of an old burial site of white people were uncovered, there would be a frenzy that would stop the project in its tracks. How is it that human remains of an ancient tribe of Native Americans is nothing more than "COULD BE VIEWED AS...?" This is not an emotional plea, so please don't interpret it as such. This is a simple fact that I see as dismissive when your very next statement puts such a discovery in the same category as the building of a jail nearby. Additionally, I'm sure the wildlife in the area are pretty convinced that the building of this plant will constitute cumulative impact.

71-09

I could continue in this vein for a very long time, as this Draft EA is full of inconsistencies and unsubstantiated claims. It appears clear that your charge is to go forward with this plant no matter what. I am so very disappointed in my own government's inability to do nothing but fall forward onto the sword of an earmark despite the level of local opposition it has received. Joe, you told me that this plant began with politics and it is politics, and only politics, that can stop it. For the record, it appears to me that the process you have been following is, sir, politics. My government says it wants to do something with coal, and so it is. If that's not political, then what is it?

71-10

When the Final EA is published, please send me a hard copy so that I may study it carefully.

Sincerely,
Caralee Woods
11776 E 850 S
Kanab, UT 84741
cgwoods@hughes.net

Responses**Comment 71-08**

In response to scoping comments received, DOE attempted to locate information on the effects of development of the Kane County Public Safety Facility and Kane County Landfill on regional tourism in order to compare with potential effects of the development of the Pilot Plant and did not find any readily available information stating that these facilities had any impact. Viresco currently is anticipating that approximately nine employees would be required and four may be contract employees, though the exact nature of the employment and number of workers is not currently known. Regardless of what job tasks are ultimately performed by these workers, they would represent approximately nine new jobs employed in the engineering industry. This would be a diversification of the labor force in an area of the country where the greatest amount of real income growth has been in investment income, which is often associated with retirees. In light of the Sonoran Institute report (Sonoran Institute, 2004), this would represent an economic benefit with respect to taking advantage of nearby protected public lands. Although the future behaviors of individuals employed at the Pilot Plant cannot be exactly determined, it is anticipated that the employees would choose to live in the Kanab area; if so, their presence would contribute positively to the tax base. In addition, it is commonly accepted that employees often utilize goods and services provided by businesses in the areas of their workplaces, which would cause a positive economic impact to those businesses.

Because the project would be a private enterprise (not owned by DOE) on property leased by SITLA, it would be subject to commercial tax assessments as confirmed by the Kane County Treasurer.

Comment 71-09

The subject of this comment has been addressed in the responses to comment numbers 24-07 and 61-05. The explanation in the Draft EA was intended to describe the potential for inadvertent discovery of human remains, including Native American remains, and the fact that any such discovery would result in a cumulative impact in light of the prior discoveries during excavation for the Jackson Flat Water Supply Storage Project.

Comment 71-10

Comment noted.

Commenter 72 – Don Collins

Joseph Zambelli - gasification plant

From: "don collins" <donandotto@yahoo.com>
To: <joseph.zambelli@netl.doe.gov>
Date: 9/19/2011 4:58 PM
Subject: gasification plant

72-01

sirs; i would like to make you aware that there is a shut in refinery 2 miles to the south!!
i would be willing to bet the owners would welcome this project! probable not your decision to make but, any influence on your part would be appreciated !
thank you don collins

Responses

Comment 72-01

The subject of this comment has been addressed in the response to comment number 8-01.

Commenter 73 – James R. Henley, Jr.

Mr. Joseph Zambelli
NEPA Documents Manager
U.S. DOE—NETL
3610 Collins Ferry Road
PO Box 880
Morgantown, WV 26507

Dear Mr. Zambelli,

Following are my comments on the Draft EA for Utah Coal and Biomass Fueled Pilot Plant (DOE/EA-1870D).

3.10.1.3 ECONOMY AND EMPLOYMENT

"It is highly unlikely that the presence of the proposed facility would disrupt the enjoyment of these recreational locations or associated local economic activity considering the relatively small size of the proposed facility...and the distance of the recreational lands from the site."

"Although plant structures would be visible...the Pilot Plant would be located in proximity to the Kanab Municipal Airport, the Kane County Public Safety Facility, the Kane County Landfill, and existing communication towers, which are already visible from the same locations and have not detracted from regional tourism."

The above passages address questions I raised in my earlier letter where I asked about threats to existing jobs in local business. I think the EA is inadequate in several respects and raise question about how seriously the EA addressed potentially important economic issues.

- No data or references are cited of evidence of the EA's conclusion that it is "highly unlikely" the proposed plant would pose a threat to existing jobs in Kanab. While visitation to Zion, Bryce, and the Grand Canyon National Parks might well show no change, where those tourists spend nights, eat, and make other expenditures cannot be presumed to be unaffected by the Pilot Plant's presence. Tourists have choices roughly equidistant from where they recreate:
Grand Canyon—stay in Kanab, Page, AZ, or Jacob's Lake
Bryce—Kanab vs. Cedar City, Panguitch, or Ruby's Inn
Zion—Kanab vs. St. George, Hurricane, Springdale, or Washington

Such choices may have a net zero impact on the regional tourism economy, but Kanab may lose revenue and jobs while other communities gain them.

73-01

Responses

Comment 73-01

The subject of this comment has been addressed in the response to comment numbers 21-03 and 36-06.

Commenter 73 – James R. Henley, Jr. (continued)

- The EA cites other manmade structures near to the proposed plant location; there is no recognition that different structures or facilities may have very different impacts on the viewer's judgments and consequent actions.

A visitor approaching Kanab on Highway 89 from the east can see these structures from a distance. If they see a tower and conclude it serves the purpose of communication, does that elicit the same reaction as seeing a tower whose purpose appears to be to flare off substances likely to be otherwise harmful?

73-02

If visitors see a hole in the ground, what is their reaction if they correctly identify a sanitary landfill vs. thinking they see an open-pit coal or copper mine?

When they see an airport, will their reaction vary according to what kind of airport it is: a municipal facility for small craft, a regional freight distribution where night flights will be common, or a SAC base for B52 flights?

When they see a jail they may conclude it is a "normal" feature of most towns across the nation. If they see what they think is a high security prison, their reaction will likely differ.

In the future Jackson Flat Reservoir will be completed and identifiable from as far as a body of water. Is it a lake or reservoir? Is it a sewage treatment facility? Is it an impoundment pond for evaporating polluted water, leaving behind some toxic solids and perhaps also evaporating noxious volatile compounds.

Even had the EA presented evidence that the manmade structures had had no impact on regional tourism, it still necessitates a serious look at what a different structure—a gasification plant—might have on regional and local tourism revenue.

73-03

My earlier letter also asked about possible impacts the Pilot Plant might have on immigration to Kanab and, thus, on the economy and on sales and price of housing. These questions were not addressed in the EA. I see only historic data on pp. 80-81, but no consideration of what might happen were the Pilot Plant to depress immigration and housing values.

In looking at the EA, two other questions occurred to me about topics I had not addressed in my earlier letter.

73-04

- Section 2.7.5 DECOMMISSIONING** notes "... Viresco would be responsible for properly removing structures, equipment and debris, restoring the land to the original contours, and revegetating the land..." Is there any assurance that this could not be avoided by circumstances such as Viresco's bankruptcy?

73-05

- Section 2.0 PROPOSED ACTIONS AND ALTERNATIVES**
Is there no other site where such a Pilot Plant could be located? While there is some support for the Pilot Plant in Kanab, there is certainly a sizeable opposition thereto.

Responses**Comment 73-02**

As stated in the response to comment number 24-06: "Aesthetics" is not a resource that readily lends itself to quantitative impacts, particularly when considering visibility of structures by individuals. Some individuals would consider the visibility of manmade features to be more of an impact on their aesthetic appreciation of a vista than others would. In this context, the Draft EA considered the aesthetic qualities of Kanab, and the qualitative effects of the proposed Pilot Plant on the local viewshed. Figure 3-6 has been revised in the Final EA (now Figure 3-7) to show approximately how large the Pilot Plant would appear from the same vantage point in comparison to the visibility of nearby manmade features. As conceptually depicted in Figure 2-3 of the EA, the Pilot Plant would be a relatively modest commercial-industrial facility occupying an acre and a half. Except for the exhaust flare structure and associated scaffolding, the facility would be comparable to other commercial-industrial facilities located along US 89A and elsewhere in Kanab and Fredonia.

Comment 73-03

The subject of this comment has been addressed in the response to comment number 63-10.

Comment 73-04

As stated in response to comment number 24-03, Section 2.7.5 was revised to include a discussion of specific decommissioning activities that would occur.

Comment 73-05

The subject of this comment has been addressed in the response to comment number 8-01.

Commenter 73 – James R. Henley, Jr. (continued)

**73-05
(cont'd)**

Some of this is not doubt apparent to you in the form of the size of crowds at local hearings and the volume of letters you have received in opposition. Additionally, the successful citizen Initiative (with signatures collected quickly surpassing the minimum required) and the more recent primary results for the upcoming Kanab City Council elections attest to the local opposition.

73-06

I thank you for considering my input. I hope you will see the EA is, at least, modified to address the deficiencies I have identified and consider extending the comment period to allow for additional input from concerned citizens.

Sincerely,
Dr. James R. Henley, Jr.
11778 E 860 S
Kanab, UT 84741
cqwoods@hughes.net

Responses

Comment 73-06

Comment noted. The subject of this comment has been addressed in the response to comment number 20-01.

Commenter 74 – Alan R. Beebe

Date: Thu, 16 Jun 2011 23:37:07 +0000

Mr. Zambelli:

Following are my observations and comments regarding the proposed Viresco facility:

74-01

1. All coal gasification systems emit micro particles that have been demonstrated to be a severe respiratory hazard. It is an industry standard that particulate mitigation measures (e.g. filtration, separators and scrubbers) be installed so that these emissions may be substantially reduced. No such measures are stated for installation for the Viresco facility. The projected particulate emissions for this facility must be examined for potential community health effects.

74-02

2. Mr. Guthrie has stated that the pulverizing of coal to a 100 micron size (100 micron particles are the same as white flour or bagged Portland cement particles) is to be performed at the facility. Coal dust is listed by OSHA as an explosive hazard, so this is an extremely dangerous operation. Also, any dust of this size is notoriously difficult to handle and contain. There is no reportable quantity for the release of coal to the environment so it is possible that Viresco may escape accountability for coal dust release.

74-03

3. All normal coal gasifications systems must have measures in place to scavenge valuable materials resulting from the process (e.g. sulfuric acid). The scavenging of these materials not only make financial sense, they also serve to minimize the release of hazardous materials to the air or to other waste discharges. Viresco has not included any of these preventative measures or systems for installation in their facility.

74-04

4. This facility would negatively impact the liveability of the city due to noise, stench (hydrogen sulfide, or rotten egg gas), smoke and pollution opacity, and other visual disruption.

I believe that Viresco's process must be carefully examined. I see no justification for the construction of this facility near any population due to the extreme risks, both to health and to quality of life.

Thank you for your consideration.

Alan R. Beebe
39 W 200 N
Kanab, UT

Responses**Comment 74-01**

The subject of this comment has been addressed in the responses to comment numbers 52-08 and 63-06. Effects to air quality are addressed in Section 3.5.2 of the Final EA.

Comment 74-02

The subject of this comment has been addressed in the response to comment number 27-05.

Comment 74-03

The Pilot Plant would be designed to reuse sand and wastewater and Viresco would recover and recycle other materials to the extent practicable. Sulfuric acid, as mentioned by the commenter, would not be part of the gasification process at the Pilot Plant.

Comment 74-04

DOE maintains that the EA adequately describes the potential impacts of the Pilot Plant from noise, odors and air emissions, and visibility in Sections 3.9.2, 3.5.2, and 3.2.2, respectively.

Responses

Comment 75-01

Comment noted.

Commenter 75 – Don Collins

Joseph Zambelli - gas plant

From: "don collins" <donandotto@yahoo.com>
To: <joseph.zambelli@netl.doe.gov>
Date: 9/24/2011 5:52 PM
Subject: gas plant

75-01

sirs; it dosent make a bit of sense to put a industrial plant next to a recreation area!!!

maybe mike noel will try to squeeese in a slaughter house and a theme park to

collect rent on? its obvious he is only concerned for his selfish motives!!!!

don collins

Commenter 76 – Walter Fertig

Dear Mr. Zambelli

Thank you for the opportunity to comment on the draft EA prepared by DOE for the proposed coal gasification plant in Kanab Utah. I believe the following items from the draft EA need better clarification:

- | | |
|-------|--|
| 76-01 | 1. Purpose and Need: Why such a plant needs to be located within a population center (the incorporated city limits of Kanab, UT) is not demonstrated. The health risks to the population of the city from increased air pollution, vehicle traffic, and potential impacts from a failure of the plant (using carbon monoxide and extreme temperatures and pressure in an experimental facility implies high risk) would suggest the plant ought to be located away from population centers. |
| 76-02 | 2. Alternatives: Again, why was no alternative location analyzed for siting this plant? The Congressional earmark does not stipulate this precise location. |
| 76-03 | 3. Decommissioning: The draft states that the site (leased from the state of Utah) will be "restored no later than the end of the site lease period" which is 30 years. So ... if the plant shuts down in 2 years the operators have 28 years to clean up the site and restore the area? The entire decommissioning process needs to be explained more clearly. |
| 76-04 | 4. Cultural resources: Excavation of the adjacent Jackson Flat Reservoir (originally sold as a site for public recreation and irrigation, but apparently designed all along for industrial development) uncovered a significant number of Indian burial sites. It would seem plausible that this site would have similar significance, but this is not fully analyzed in the draft EA. What are the full legal ramifications of federal dollars being used to potentially impact cultural resources, even if on state lands? |
| 76-05 | 5. Under irreversible or irretrievable commitment of resources: more elaboration is needed on how wastewater will be treated and returned to the environment. Groundwater pollution is a serious concern from this project, but is not adequately addressed in the draft document. |
| 76-06 | 6. Finally, I'm curious why DOE and the project proponents are using an EA for this project, rather than an EIS. The EA requires the DOE signing official to make the declaration of a "Finding of No Significant Impact" (FONSI) for the project to proceed. This puts the DOE and proponents on the defensive to demonstrate no impacts if challenged in court. Given the likely effects on air and water pollution and cultural resources, DOE could easily lose a legal challenge. Conversely, doing an EIS requires no FONSI statement; all the proponents have to do is acknowledge there are potential impacts that are |

Responses

Comment 76-01

The subject of this comment has been addressed in the response to comment number 8-01. As stated in response to comment number 43-07, DOE revised Section 3.9.2 in the Final EA to analyze a potential catastrophic accident scenario during plant operations and emergency response. Potential impacts related to vehicle traffic and air pollution are discussed in Sections 2.9.2 and 3.5, respectively.

Comment 76-02

The subject of this comment has been addressed in the response to comment number 8-01.

Comment 76-03

As stated in response to comment number 24-03, Section 2.7.5 was revised to include a discussion of specific decommissioning activities that would occur.

Comment 76-04

The subject of this comment has been addressed in the responses to comment numbers 24-07 and 61-05. The federal government has responsibilities under the National Historic Preservation Act and the Native American Graves Protection and Repatriation Act which apply to any federal action, regardless of land ownership.

Comment 76-05

Under the 30-day operation for the proposed action, the process water would be recycled back into the gasification system and not discharged to the environment. Some process water would be lost through evaporation. As a connected action, Viresco could choose to operate for 130 days, and may then construct an evaporation pond to hold excess wastewater as it evaporates. Alternatively, Viresco could discharge the wastewater to the Kanab municipal sewer system. Groundwater impacts are appropriately addressed in the EA in Section 3.6, rather than in Section 5.2 which addresses irreversible commitment of resources. During normal operations of the proposed project, there would be no liquid discharge at the project site. In the event of an accidental spill or discharge, Viresco would use their SPCC Plan to guide the cleanup response. If an evaporation pond were constructed as a connected action, the HDPE liner would be used to prevent retained wastewater from reaching groundwater.

Comment 76-06

The subject of this comment has been addressed in the responses to comment numbers 12-01 and 51-02.

Responses

Commenter 76 – Walter Fertig (continued)

**76-06
(cont'd)**

overridden by national need or other mitigating circumstances. The burden of proof shifts from the proponents to any appellants, and the project is more likely to proceed. Of course this takes more time and more detailed analysis. This project seems to be on a fast track, which makes me suspicious of whether the proponents really have the financial wherewithal to complete the project. Given the hard economic times and the belt tightening going on in Washington, this project is a perfect example of government pork going to a few well-connected fat cats at the expense of the taxpayer and, apparently, the health and well-being of 5000 Kanab city residents.

Thank you -

Walter Fertig
1117 W Grand Canyon Dr
Kanab, UT 84741

1 UTAH COAL AND BIOMASS
2 FUELED PILOT PLANT DRAFT EA
3

4 PUBLIC HEARING
5

6 Draft Environmental Assessment (EA) for the
7 Proposed Utah Coal and Biomass Fueled Pilot Plant
8 in Kanab, Utah
9

10
11
12 Formal Session held on Wednesday, August 31,
13 2011 at 3:58 p.m., at the Kaibab-Piute Community Center in
14 Pipe Springs, Arizona.
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1 P R O C E E D I N G S

2 MR. ZAMBELLI: Good afternoon. I would like to
3 welcome you to the Kiabab tribal community meeting of the
4 Utah Coal and Biomass Fueled Pilot Plant Draft
5 Environmental Assessment. My name is Joe Zambelli. Let
6 the record show that this meeting began at August 31st of
7 2011, 3:58 p.m. at the Kaibab Community Center.

8 As part of its compliance with NEPA, the
9 National Environmental Policy Act, the DOE is producing a
10 draft Environmental Assessment or EA. This assessment
11 describes the potential impacts of the proposed project
12 and project alternatives. Both the document and the
13 comments received should help DOE make a better informed
14 decision.

15 The draft EA has been distributed to persons
16 who previously expressed some type of interest in the
17 project. If you made a request for a copy of the
18 document and have not received it, please provide your
19 mailing address to me and indicate the form in which you
20 would like to receive the document.

21 Typically after a draft EA is distributed to
22 the public, the DOE does not hold public hearings or
23 community meetings. We are in this case due to the level
24 of public interest and concern expressed to date. More
25 specifically tonight's meeting will provide an

1 opportunity for you to give us your input from the tribal
2 community. It's an opportunity for DOE to listen to your
3 concerns about the proposed project, whether it be
4 environmental issues, economic impacts, socio-economic
5 matters and safety and health concerns. DOE's goal is to
6 improve the EA and to facilitate public input into this
7 decision making process.

8 Now for your convenience there are comment
9 sheets available at the table in the outer room. Please
10 use those to submit your comments in writing. Fill out a
11 comment sheet, give it to me this afternoon, or you can
12 send them to me at a later date. Also use the comment
13 sheets to request a copy of the draft EA and for the
14 final EA.

15 The EA is available in four forms, printed hard
16 copy, a hard copy along with a CD, a CD or e-mail
17 notification with a link to the website where you can
18 download the document. Again, comment sheets are
19 available on the table in the outer room.

20 Now we'll have a short informal session after
21 this formal session concludes, and you can talk to us and
22 ask us any questions. During the formal session I will
23 present a brief review of the project as well as what's
24 being done in the area of NEPA compliance. Note that
25 there is a court reporter here to prepare a transcript of

1 this meeting which will include your comments. They will
2 be included in the final EA.

3 We do not answer questions during the formal
4 comment period. However, as I mentioned earlier, we will
5 be here afterwards to talk with you individually and
6 we'll attempt to answer any questions. Written comments
7 will be given equal weight as oral comments. You may
8 provide written comments instead of or in addition to
9 oral comments.

10 We ask that you submit your comments if done so
11 in writing, provide them to us by September 16th, 2011.
12 Now while you may already know the folks here from the
13 Department of Energy, Jesse Garcia is our NEPA compliance
14 officer and our tribal liaison. As I mentioned, I'm Joe
15 Zambelli and the NEPA document manager for this project.
16 I'd like to go through the presentation. This is what
17 was given last night in the community in Kanab.

18 Next slide, please. This is also an
19 opportunity for the Kaibab to comment on the draft EA.
20 The draft EA evaluates potentially significant impacts in
21 the human environment. The National Environmental Policy
22 Act, more commonly referred to as NEPA, is the process
23 required because of the federal funding which is pursuant
24 to a Congressional earmark in the fiscal year 2010
25 Appropriations Act. And it has an accompanying

1 conference report. The report number and date are
2 indicated on there. The Department of Energy also
3 engaged in a cooperative agreement with Viresco Energy.
4 That's the number as well as the date. Now, Viresco is
5 prohibited from using federal funds for activities that
6 would have an adverse impact or limit the choice of
7 reasonable alternatives until the NEPA process is
8 complete, but Viresco may use its own funds for these
9 activities.

10 Last night was an opportunity for the public to
11 learn about the project. This is your chance for the
12 Kaibab to learn about the project, to make comments with
13 analysis, and in the draft EA. The formal comment
14 process facilitates spoken comments. And if you could
15 sign up -- did anyone sign the sign-in sheets? If you
16 haven't signed-in, please do so to speak. And again,
17 we'll try to get your written comments, please submit
18 written comments by September 16th, 2011. This was the
19 agenda that was presented last night. It doesn't fit
20 here. Dan Driscoll is not here, and Arun is not here.

21 LEANN: We've had three people sign in. No one
22 has signed in to speak yet.

23 MR. ZAMBELLI: That's fine. Next slide,
24 please. Now let me go through this presentation. This
25 was explained last night at the public hearing. I'll go

1 through. Most of you are already familiar with this.
2 The Kaibab band of Paiute Indians objected to statements
3 DOE representatives made during the May 18th scoping
4 meeting which implied that formal government to
5 government consultation has been initiated. At that
6 point in time, only staff to staff level contact had
7 occurred with the Kaibab band. Following that the Kaibab
8 band provided scoping comments to DOE via letter dated
9 June 13th, 2011. DOE also received responses from the
10 Hopi and Navajo tribes indicating the proposed project is
11 unlikely to affect cultural resources of concern to their
12 respective tribes.

13 DOE representatives again met with Kaibab
14 tribal council on July 21st, 2011, and at that time began
15 formal government to government consultation.

16 DOE sent a letter of retraction to the Kaibab
17 band on August 1st, correcting this misunderstanding.
18 Following this, DOE appointed a tribal liaison to
19 facilitate formal government to government consultation.
20 As I mentioned, that's Jesse. DOE met last week, August
21 21st, with the tribal council to review the status of the
22 NEPA process and discuss tribal concerns including the
23 DOE's draft plan for treatment of unanticipated
24 discoveries. And DOE plans to continue this government
25 to government consultation with the Kaibab.

1 On the left is a flow chart that explains the
2 NEPA process. That's what we're using for this project.
3 DOE collected comments for a 30-day period at the scoping
4 meeting. Currently, DOE is soliciting comments on the
5 draft EA for 30 days. If you look at the flow chart on
6 the left, the first box says prepare draft EA. That's
7 what we've done so far, and we're incorporating public
8 comments in this. That's what we will do in this comment
9 process. When that's complete we will prepare a final
10 Environmental Assessment.

11 Once that document is prepared, there are two
12 possible outcomes. If it is determined there are
13 significant impacts to the environment or impacts that
14 cannot be adequately or sufficiently mitigated, then we
15 would prepare an EIS. However, if there are no
16 significant impacts or those impacts can be sufficiently
17 mitigated a finding of no significant impact, and at that
18 point the funds can be released to Viresco. But as I
19 mentioned last night, we're not there yet. So we're just
20 in the comment portion. So we have days to go.

21 Go to the next slide. Now in the draft EA
22 process we evaluated 13 environmental resource areas in
23 detail. It considered potential for significant adverse
24 environmental impacts from construction and operation of
25 the proposed project. Let me summarize those potential

1 impacts as described in the EA draft.

2 There were no or negligible impacts in three
3 resource areas, geology, culture resources, and
4 environmental justice. There appear to be minimal
5 impacts to these resource areas, air quality, greenhouse
6 gases, soils, ground water, vegetation and wildlife,
7 materials and waste, and public health and safety during
8 the construction and operation. There appear to be minor
9 to moderate impacts to the aesthetics and land use.
10 There appear to be negligible to minor adverse cumulative
11 impacts with other past, present or reasonably
12 foreseeable future actions.

13 There is a minimal beneficial socio-economic
14 impact by creating jobs during the construction and
15 operation, and the document outlines 25 temporary
16 construction jobs and nine permanent jobs during the
17 operational portion of the project. Once the facilities
18 are in operation, there are jobs there. Once the
19 facilities cease operation the jobs disappear.

20 Next slide, please. After the comment period
21 ends, the Department of Energy will consider all comments
22 received, and we will prepare a final environmental
23 assessment. Once it issues this final environmental
24 assessment, there are four possible outcomes. If it
25 determined that the project does not have potentially

1 significant impacts to the human environment it can issue
 2 a finding of no significant impact and at that point the
 3 funds could be released to Viresco.

4 The second possible outcome is that the project
 5 would not have potentially significant impacts if certain
 6 mitigation actions were taken. At that point we would
 7 prepare a mitigation action plan in the document as a
 8 condition of the project, and funds can be released.

9 A third option is that there are potentially
 10 significant impacts that cannot be adequately mitigated.
 11 At that point we would begin preparation of an
 12 Environmental Impact Statement. Fourth possibility is
 13 that if it determines that the project may not proceed
 14 due to an inability to acquire local, state and federal
 15 permits or to meet some other requirements, as I
 16 indicated last night, these are things beyond the control
 17 of the DOE. DOE has no jurisdiction in these areas
 18 things.

19 Next slide, please. Now, to comment on the
 20 draft EA, you have several options here. You can speak
 21 tonight in the formal process during this meeting. You
 22 can send written comments to me via the U.S. Mail,
 23 comment form is out there on the table. You can fax your
 24 comments to me or e-mail them to my e-mail address.
 25 Again, the deadline is September 16th, 2011. DOE will

1 consider late comments to the extent practicable.

2 Now, we have had requests for a time extension,
 3 two requests asking us to extend the comment period, and
 4 that will be taken in review as soon as I get back home
 5 we'll deal with that then. Now, this is important. You
 6 will note that individual names, addresses and e-mail
 7 addresses received as part of the comment documents are
 8 normally considered part of the public record. Persons
 9 wishing to withhold names, addresses or other identifying
 10 information from the public report must state this
 11 request prominently at the beginning of their comments.
 12 DOE will honor this request to the extent allowed by the
 13 law. All submissions from tribes, organizations, actions
 14 and individuals identifying themselves as representatives
 15 or officials of tribes, organizations or businesses will
 16 be included in the public record and open to public
 17 inspection in their entirety. Send your comments to this
 18 address right here. Again, we ask that you try to
 19 provide your comments by September 16th, 2011.

20 Comment session. LeAnn indicated no one has
 21 signed up to speak, but that doesn't matter. You can
 22 still come up and comment. Roland, you want to come up?
 23 If you could come close to the court reporter here so he
 24 can get your statement on the record.

25 ROLAND MALDONADO: Roland Maldonado,

Commenter 77 – Ronald Maldonado

11

77-01

1 M-A-L-D-O-N-A-D-O. I commented last night kind of on a
 2 few issues. Again, with the emissions from the stacks, I
 3 think it would be better if they error on the side of
 4 safety and put scrubbers in the stacks to help them make
 5 sure the air is clean. And as Joe or Mr. Noel had
 6 mentioned last night, at this point there is no
 7 technology to recapture all of the emissions from the
 8 stacks. Also again, concern with the fly ash, and the

77-02

9 fact that they plan to put it in the Kanab landfill, and
 10 they are ignoring the hazardous waste material that comes
 11 out of the fly ash. And then also again concerns with
 12 the affects that this will have on the vegetation that we
 13 use to gather for medicine, the minerals that we use for
 14 paint and other things, and how this is going to affect
 15 us individually when we consume or use these on
 16 ourselves.

77-03

17 I think this is not enough to because part of
 18 your draft EA is the effect it has on human environment.
 19 And with the lack of experience that the government has
 20 in the aspect of our environment and our culture, they
 21 really don't have a basis for making a statement that
 22 there is no -- there is negligible effects. They have
 23 nothing to base that on. So I think the best thing for
 24 them to do is to develop a full EIS so they can get
 25 information about these things and see how they are going

77-04

Responses

Comment 77-01

The subject of this comment has been addressed in the response to comment number 52-08.

Comment 77-02

The subject of this comment has been addressed in the response to comment number 15-09.

Comment 77-03

The EA has been revised to include a more in-depth analysis of Biological Resources (see Section 3.11), including the addition of the following statement: "Air emissions from the construction and operation of the Pilot Plant would be very small and would not be toxic to plants or animals in the region, including those in northern Arizona, or to people utilizing these natural resources (see Section 3.5)." No effects to any mineral resources in the region would be expected.

Comment 77-04

The subject of this comment has been addressed in the responses to comment numbers 12-01 and 51-02.

Commenter 78 – Colette Cox

12

1 to effect us. Okay. That's it.

2 LEANN: Anyone else? Do you guys want to make
3 any comments?

78-01

4 COLETTE COX: I can make a comment. My name is
5 Colette Cox, C-O-L-E-T-T-E, C-O-X, and I'm a Kane County
6 resident and also a tribal employee, and my comments
7 today are just that the new technology sounds very
8 interesting and exciting. Because I know that the
9 Department of Energy and businesses across the country
10 and across the world are looking for improved technology.
11 And so I think in that regard this project is exciting,
12 and from a economic standpoint, you know, it looks like
13 it will benefit a few people by creating some jobs, not a
14 whole lot but some jobs.

78-02

15 But I share some of the environmental concerns
16 about the emissions and also the fly ash. If it will be
17 kept in Kane County or if it will be hauled away like the
18 fly ash from the Page power plant. Probably my biggest
19 concern is the location of the proposed plant, and it
20 seems like that process was hurried through the city
21 council and the planning and zoning interest in Kanab,
22 and so I do have some concerns about how that was
23 handled, and I would like to see that revisited.

78-03

24 It sounds like the environmental impacts
25 according to the Department of Energy will be minimal,

Responses

Comment 78-01

Comment noted.

Comment 78-02

The subjects of this comment have been addressed in the responses to comment numbers 15-09 and 32-03.

Comment 78-03

The subject of this comment has been addressed in the response to comment number 8-01.

Responses

Commenter 78 – Colette Cox

13

78-03
(cont'd)

1 and but I would like to get some information and actually
2 read the study for myself. I've just been reading the
3 news articles and listening to presentations and things.
4 So -- but I would like to see the city go back and
5 reevaluate whether if they do decide to go ahead with the
6 project if that is the best location for the project.

7 Thank you.

8 MR. ZAMBELLI: Thank you. Anyone else like to
9 make a comment? Okay. Let me mention a couple things I
10 mentioned at the public hearing. First, there are some
11 small discrepancies in the water requirements noted in
12 the draft environment assessment. The actual numbers are
13 a little bit bigger than what's there. This discrepancy
14 will be corrected in the final EA.

15 And something Roland mentioned here. You know,
16 we -- this project we've gone above and beyond the call
17 of duty in preparing the document. Normally
18 environmental assessments don't have scoping meetings,
19 don't have public hearings and don't have comment
20 meetings. But due to the level of interest, the level of
21 distribution, comments we received, we have felt that was
22 only appropriate. Those items are typically given in an
23 Environment Impact Statement. So even though this isn't
24 officially an EIS, it is for all practical purposes it
25 has the same level of review, as an Environmental Impact

Responses

14

1 Statement. All the comments we received we'll evaluate.
2 Responses will be provided for each one of the comments
3 in the final assessment.

4 If there are no other comments, then we'll
5 conclude the formal session of the Kaibab tribal
6 community meeting for the Viresco Draft EA. Let the
7 record show that this meeting adjourned at 4:23 p.m.
8 Thank you.

9 (Meeting adjourned.)

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Responses

1 STATE OF UTAH)
) SS.
 2 COUNTY OF WASHINGTON)

3

4 I, RORY JOHNSON, Certified Court Reporter,
 Registered Professional Reporter and Notary Public for the
 5 State of Utah, certify:

6 That the foregoing public hearing of the
 UTAH COAL AND BIOMASS FUELED PILOT PLANT EA, was taken
 7 before me at the time and place therein set forth;

8 That the proceedings of the meeting were
 recorded stenographically by me and were thereafter
 9 transcribed;

10 That the foregoing transcription is a true
 record of the proceedings recorded and transcribed by me
 11 to the best of my ability;

12 I further certify that I am not related to any
 party to said action nor in anywise interested in the
 13 outcome thereof.

14 IN WITNESS WHEREOF, I have subscribed my name
 and affixed my seal this 18th day of September, 2011.
 15

16

17

18 _____
 RORY N. JOHNSON, RPR
 Notary Public in and for
 19 Washington County, State of Utah

My Commission Expires:
 20 May 20, 2014

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1
2 UTAH COAL AND BIOMASS
3 FUELED PILOT PLANT DRAFT EA
4
5 PUBLIC HEARING
6
7 Draft Environmental Assessment (EA) for the
8 Proposed Utah Coal and Biomass Fueled Pilot Plant
9 in Kanab, Utah
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12
13 Formal Session held on Tuesday, August 30, 2011 at
14 7:00 p.m., at the Kanab Middle School, Kanab, Utah.
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1	I N D E X	
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P R O C E E D I N G S

1
2 MR. ZAMBELLI: Welcome to the Department of
3 Energy public hearing on the Draft Environmental
4 Assessment for the Utah Coal and Biomass Fueled Pilot
5 Plant project here in Kanab, Utah. My name is Joe
6 Zambelli with the U.S. Department of Energy. Please bear
7 with me as I read this.

8 Let the record show that the hearing began on
9 August 30th, 2011, 7:00 p.m, at the Kanab Middle School
10 here in Kanab, Utah. As part of its compliance with the
11 National Energy Policy Act, DOE has produced a Draft
12 Environmental Assessment or EA. This document describes
13 the potential environmental impacts of the proposed
14 project and project alternatives. Both the document and
15 comments received should help DOE make a better informed
16 decision.

17 The draft EA has been distributed to persons who
18 have previously expressed some type of interest in the
19 project. If you previously requested a copy of the
20 document and have not received it, please provide your
21 mailing address to Joe Grieshaber at the table at the
22 rear of the room and indicate the form in which you would
23 like to receive the document.

24 Typically, after the draft EA is distributed to the
25 public, the DOE doesn't hold a public hearing as we are

1 tonight, but we are in this case because of the level of
2 public interest and concern expressed to date. More
3 specifically, tonight's public hearing provides an
4 opportunity for the public to give their input in the
5 draft EA, and provides an opportunity for the Department
6 of Energy to listen to your concerns about the proposed
7 project, whether it be environmental issues, economic
8 impacts, socioeconomic matters as well as safety and
9 health concerns.

10 Our goal tonight is to improve the EA and facilitate
11 the public input process in the decision making aspects
12 of this project. For your convenience there are comment
13 sheets available at the rear of the room, and they look
14 like this here. You can use those to provide your
15 comments in writing, fill out the comment sheets and give
16 them to us tonight, or send your comments to me at a
17 later date. You can also use the comment sheets to
18 request a copy of the draft EA and a final EA when it's
19 prepared.

20 The EA is available in four forms. We have a
21 printed hard copy version, a hard copy summary, and CD,
22 and lastly you can receive an e-mail notification with
23 the link that you can go to a website and download the
24 document. Again, comment sheets are available on the

1 During the informal session, which we just completed
2 in the last two hours, DOE and its contractors as well as
3 representatives of Viresco Energy were available to
4 listen to your concerns and attempt to answer your
5 questions. We hope the session was as informative for
6 you as it was for us.

7 During the formal session tonight, we will briefly
8 present the role of the DOE, and we'll go over the
9 relevant parts, the need for compliance and the remaining
10 schedule. And then afterwards Viresco Energy will
11 present an overview of the project, then we will begin
12 the formal comments session.

13 We will give priority to elected officials and
14 tribal members who will go first, then we'll go down the
15 sign-up list. So it's important if you have not signed
16 up to speak and wish to do so, please do so very shortly.
17 Note that there is a court reporter here and a transcript
18 of the hearing, including your comments, will be prepared
19 and included in the final environmental assessment.

20 We do not answer questions during the formal comment
21 period; however, we will talk with you individually after
22 the formal comment period and attempt to answer any
23 remaining questions you may have. We hope to continue
24 the informal session for an hour after this formal
25 session concludes so you will have time to talk with us

1 individually if you need to.

2 Written comments are given equal weight with oral
3 comments. You may provide written comments instead of or
4 in addition to oral comments. The oral comment sheets
5 are available at the table at back of the room. You can
6 fill out the sheets and submit them tonight or anytime
7 before the close of the comment period which would be on
8 September 16th, 2011.

9 Let's go over tonight's agenda. First we'll discuss
10 the need for NEPA compliance. That will be me, Joe
11 Zambelli. I am with the Department of Energy out of
12 Morgantown, West Virginia. Next, Dan Driscoll, Dan if I
13 can ask you to stand, please. Dan is in the rear of the
14 room. Dan will discuss DOE's proposed action. Dan is
15 also with the Department of Energy and from the
16 Morgantown office.

17 Following Dan will be a project overview from
18 Dr. Arun Raju, if you would stand please. He's with
19 Viresco Energy. He's the research director; is that
20 correct? And then following we'll turn it over to you
21 for your comments.

22 Now, do we have any elected officials visiting us
23 tonight? If you could stand and identify yourself so we
24 know who else is here?

25 MIKE NOEL: Mike Noel, State Representative.

1 MS. LAKEWOOD: Dena Lakewood, mayor.

2 MR. SORENSEN: Jim Sorensen, city council.

3 MR. ZAMBELLI: Anyone else? Again, representing
4 the DOE, we have Dan Driscoll. He's our technology
5 manager. We also have Darryl Shockley. Darryl, if you
6 would stand. Darryl is the project manager. We have
7 Jesse Garcia, Jesse is manning the projector here. If
8 you recall, he was here last time at the scoping meeting
9 back in May, and then myself. Representing the project
10 we have Jim Guthrie, who is representing Viresco. And
11 again, Dr. Raju is the research director. Now, preparing
12 the environmental assessment, we have Joe Grieshaber of
13 Potomac Hudson Engineering back here in the rear.

14 And now it's time for the presentations to provide
15 you with some background information for the project.
16 And then after that there will be formal presentations
17 one from myself and one from Dr. Raju and then Dr. Dan
18 Driscoll.

19 Next slide please. The purpose of tonight's
20 meeting, this is an opportunity for the citizens to
21 provide comments on the draft EA. The draft environment
22 assessment addresses potential significant impacts of the
23 environment. The National Environmental policy process
24 that we have come to refer to as the NEPA process, is
25 required because of Federal funding pursuant to the

1 congressional earmark in the year 2010 and the
2 Appropriations Acts in the conference report. The
3 conference report number and date are indicated on the
4 screen there.

5 The Department of Energy has engaged in a
6 cooperative agreement with Viresco Energy. That's the
7 date of the signing. Viresco is prohibited from using
8 federal funds for activities that would have an adverse
9 impact on the human environment, and also any activities
10 that would limit the choice of reasonable alternatives
11 under NEPA until this process is complete. Now Viresco
12 can use its own funds for these activities but it cannot
13 use federal funds.

14 Next slide, please. Okay. Tonight's meeting
15 objectives. This is an opportunity for the public to
16 learn more about the proposed project. It's also an
17 opportunity to make comments on the analysis as presented
18 in the draft Environmental Assessment. Now to facilitate
19 the formal comment process, we ask that you provide
20 spoken comments or oral comments tonight. Again, if you
21 sign up in the rear of the room at the registration table
22 we'll call you in order. If you have not done so, you
23 can provide written comments and at the end of the
24 presentation. I'll give you my address, and it's also on
25 the comment form in the rear, and we ask that you provide

1 those comments on or before September 16th, 2011.

2 Next slide, please. Now this is tonight's agenda.
3 We had the informal session earlier for two hours, and if
4 you haven't had a chance to see the posters over to your
5 left, then after this formal session ends please do so.
6 After we finish the formal session, we will allow you
7 informally again to ask any other questions. If you want
8 information, we can get it tonight and we'll try to
9 adjourn at 10:00.

10 Next line please. Now I want to give you an update
11 on what's happened here with tribal consultation. The
12 Kaibab Band of Paiutes objected to a statement that we
13 made in the May 18th meeting where we indicated that
14 government to government consultation had been initiated
15 at that time, but at that time what had occurred was
16 staff to staff contact with the Kaibab nation. The
17 Kaibab did provide us with scoping comments on June 13th.
18 We also received responses from the Hopi and Navajo
19 tribes, and they indicated that they believe that this
20 project was unlikely to have culturally related impacts
21 that were of concern to their respective tribes. Now DOE
22 representatives met with the Kaibab tribal council the
23 following month on June 21st and officially began
24 government to government consultation.

25 We sent a letter of retraction to the Kaibab then,

1 dated August 1st, in an attempt to correct this
2 misunderstanding. Since that time we have appointed a
3 tribal liaison to facilitate the formal government to
4 government consultation.

5 Now, we also met with the tribal council last
6 Thursday, August 25th. We reviewed the status and the
7 legal process and discussed tribal concerns as well as
8 the draft plan for treatment of unanticipated discoveries
9 at the project site. And the Department of Energy plans
10 to continue this government to government consultation
11 with the tribe in the future.

12 Next slide please. I'm going to review quickly the
13 environmental assessment process. We collected comments
14 over a 30-day period, and tonight and until
15 September 16th, we will solicit your comments of the
16 draft EA. If you go to the flow chart on the left you
17 can see the top box, we have prepared the draft EA, and
18 we are incorporating the public comments. That's what
19 we're doing tonight until September 16th. At that time
20 we will assemble all the comments, review them, prepare
21 responses, and prepare a final document, the final
22 environmental assessment. We will not do that until
23 after the comment period closes.

24 Now at that point we have to make a decision whether
25 we determine if we found out if there are any significant

1 impacts on the environment or not. If there are no
2 significant impacts, that will allow us to prepare a
3 finding of no significant impact, then we can implement
4 the action, which in this case is to provide funding for
5 Viresco Energy and be able to release those funds.

6 However, if when we finish the environmental review
7 process, we determine there are significant impacts to
8 the environment, we would proceed with the preparation of
9 an environmental impact statement. Now we are not at
10 that point yet. We need your input and your comments and
11 concerns.

12 Next slide please. Now let me give you an update on
13 the draft and what we've been able to determine so far.
14 In the draft environmental assessment, we evaluated 13
15 environmental resource areas in detail. We considered
16 the potential for significant impacts, and any other
17 adverse environmental impacts for the construction and
18 operation of the proposed project.

19 On the summary of potential impacts in the draft
20 environment assessment, it appears that there were no
21 impacts in three resource areas as indicated here,
22 geology, cultural resources and environmental justice.
23 There are minimal impacts to air quality, greenhouse
24 gases, which include CO2, soils, ground water, vegetation
25 and wildlife, materials and waste, utilities and public

1 health and safety during construction and operation.
2 There appear to be minor to moderate impacts to
3 aesthetics and land use. There are negligible to minor
4 adverse cumulative impacts with other past, present or
5 recently foreseeable future projects.

6 And lastly, there is a minor or minimal beneficial
7 socioeconomic impact by creating jobs during construction
8 and operation. And the draft EA indicates there is an
9 estimated 25 temporary construction jobs and a total of
10 nine permanent jobs which would be there as long as the
11 facility is in operation, and those are mostly
12 engineering positions.

13 Next line please. Now, as I mentioned before, the
14 funding cannot be released for this project until the
15 NEPA process is complete, and we determine there are no
16 significant impacts to the environment. So I'm going to
17 go through what the possible outcomes are. These are the
18 options available for this project. Now once the final
19 environmental assessment is completed, we will determine
20 one of the four options here.

21 We determine that the project does not have
22 potentially significant impacts, and we can issue a
23 finding of no significant impact at that point and that
24 would allow the Department of Energy to release funding
25 for this project.

1 Second, it can determine that the project would not
 2 have potentially significant impacts if certain
 3 mitigation actions were taken, and we would issue a
 4 finding which would include a mitigation action plan as a
 5 condition of the project before money can be released.

6 Now thirdly, we can determine that the project would
 7 have potentially significant impacts to the environment
 8 that cannot be sufficiently mitigated, and we would begin
 9 preparation of an environmental impact statement.

10 Lastly, we could determine the project may not
 11 proceed due to some inability to acquire a local, a state
 12 or federal permit or meet some other requirement. Now,
 13 these constraints are totally outside of the control of
 14 the Department of Energy.

15 Next slide please. Now to commenting on the NEPA
 16 document, the draft EA. The public may comment on the
 17 draft by either speaking tonight during the formal
 18 comment period, you can provide written comments via the
 19 U.S. Mail, send them to me, you can fax your comments, to
 20 the number on the comment form in the back. It's also
 21 indicated in the document itself. And you can e-mail
 22 your comments to the address indicated up there now.
 23 Again, the deadline is September 16th, 2011. We will
 24 consider late comments to the extent practicable.

25 This is important and I have to go through it, so

1 please listen carefully. I need to note that individual
 2 names, addresses and e-mail addresses received as part of
 3 the comment documents are part of the public record. So
 4 persons wishing to withhold their names or addresses or
 5 other identifying information from the public record must
 6 state this request prominently at the beginning of their
 7 comments. DOE will honor this request to the extent
 8 allowed by the law. All tribes, organizations,
 9 businesses and individuals identifying themselves as
 10 representatives or officials of tribes, organizations or
 11 businesses will be included in the public record and open
 12 to public inspection in their entirety.

13 Next slide please. That concludes my portion of the
 14 presentation. Time to turn it over to Dan Driscoll,
 15 Technology Manager of the Department of Energy.

16 DR. DRISCOLL: Good evening. And thanks for the
 17 opportunity to participate. I've been with the DOE for
 18 about 24 years. To be honest, this is the first one of
 19 these I've ever had to be involved in and we have
 20 projects that are up in the hundreds of millions of
 21 dollars. I'll go over a couple of things tonight. I
 22 want to show you what DOE is, who's implementing this,
 23 what part of the organization is implementing this, and
 24 look at what DOE's role is.

25 I'm not going to get into technical aspects because

1 it's not something we're really involved in at this point
 2 in time and you'll see why in a little bit. But to just
 3 let you know who I am, Dan Driscoll, I do have a PhD in
 4 chemistry, so we do understand -- clearly understand --
 5 the chemistry that's going on and also the science.

6 I'm the technology manager for the fuel side of the
 7 Syngas program. I run all the programs all over the
 8 United States that have to do with production of
 9 hydrogen, syngas, liquids, chemicals, etc, from coal and
 10 also sometimes from biomass and sometimes from natural
 11 gas. As I go through here, I'm going to tell you a
 12 little bit about the DOE organization. And, drop down a
 13 little further to the organization that I'm involved in,
 14 which is the Office of Coal and Power Research, and how
 15 this project fell into this part of my organization. I'm
 16 responsible for all the conversion of coal. But DOE, as
 17 you probably know, is an extremely large place and I
 18 wanted you to know where this project is being
 19 implemented out of.

20 You see at the top Secretary of Energy up at a very
 21 high level. Below the secretary is the undersecretary,
 22 and that's highlighted in that box, and that's really the
 23 Undersecretary of Energy and the Environment. So there
 24 is also environmental sections included in here. And, I
 25 have also highlighted just the specific office that we're

1 taking a look at, the Office of Fossil Energy, and that's
 2 led by the Assistant Secretary of Fossil Energy, however,
 3 this project is not being implemented out of this office
 4 from DC. It's actually being driven out of a field
 5 office which is a very unique place. It's being
 6 implemented through the National Energy Technology
 7 Laboratory.

8 The laboratory consists of primarily three main
 9 institutions. One is in Morgantown, West Virginia,
 10 that's where I'm from, as is Darryl Shockley who was
 11 introduced as the project manager and is also out of
 12 Morgantown, West Virginia. We have another large
 13 facility in Pittsburgh, Pennsylvania, actually just south
 14 of Pittsburgh, Pennsylvania. We also have a reasonably
 15 sized facility that's located out in Oregon. Actually,
 16 we have two smaller places, one in Fairbanks, Alaska, and
 17 we also have one in Texas, but this is being implemented
 18 out of Morgantown, West Virginia.

19 Next slide. What do we do then. I just thought it
 20 worthwhile to show you all the other things we're doing
 21 and where this falls. Basically, what we do is implement
 22 basic science and technology at some relatively large
 23 levels. Hopefully this will provide a little comparison
 24 to some of the other projects we manage.

25 We do a tremendous amount of on-site research and

1 development. That's probably in the order of 50 million
 2 dollars a year. That's done on-site and involves a
 3 variety of different research. We do a tremendous amount
 4 of systems analysis and planning. Any technologies out
 5 there, we typically evaluate them from a generic
 6 standpoint. We don't just go in and highlight anybody
 7 specifically, but we take a look at what the system's
 8 requirements are going to be, what's the benefits, and
 9 what are the costs involved. And there is a variety of
 10 reports that are on our website and I'll give you the
 11 website at the end, but you can go on and take a look at
 12 all the systems analysis we've done and evaluation of all
 13 the different technologies. However, that's not what we
 14 are going to talk about today.

15 What we are going to talk about a little bit more
 16 today is the last box over on the other side and that's
 17 where we conduct an Extramural Research and
 18 Collaboration. Well, what does that mean. Well, some
 19 people may call it contracts, but as you're going to find
 20 out, we call them financial assistance. Allow me to give
 21 you a little overview as to what is the size and
 22 magnitude of what we deal with on a yearly basis.
 23 Currently through ER&C, and this is primarily focusing on
 24 coal, although there is a little oil and gas portion, but
 25 it's very, very small through the coal program we

1 typically implement about 1,400 projects with the yearly
 2 project budget on the order of \$440 million. If you
 3 remember those numbers, you see where this kind of fits
 4 in with regard to this project. We work at significant
 5 levels with large dollar amounts and also manage a
 6 tremendous amount of projects.

7 Next slide. I want to get into the specifics of how
 8 we're implementing this. When we give money for
 9 research, it's typically under a contract. And in a
 10 contract situation, we primarily provide money. It gives
 11 the owner fixed costs for something, and we get a return
 12 back probably something tangible in terms of say
 13 equipment or something. We're doing research here, so we
 14 don't typically use a specific fixed price contract,
 15 although it is a contract but not specifically defined as
 16 such.

17 We typically use financial assistance awards.
 18 Typically, those are given out three different ways. I
 19 listed them here. Primarily what we deal with is a thing
 20 called competitive solicitation. In that case we put out
 21 a funding opportunity notice, and we ask for specific
 22 technologies and how to develop those technologies.
 23 After we open that up, people submit proposals.

24 When the proposals come in, we competitively
 25 evaluate those. And this is done by a group of experts,

1 usually at PhD levels now, as required with the new
2 administration that is in place. All are experts and
3 well qualified in their field.

4 When things are done this way, DOE is kind of
5 putting a blessing on these. We've technically evaluated
6 them and know what we want. In addition, when these are
7 awarded, they also can be negotiated so we can pull out
8 or add pieces to the original proposal. That's not the
9 case with this project.

10 Sometimes we end up getting an unsolicited proposal.
11 They're very rare because we really don't just want to be
12 selecting on a sole source being a particular process or
13 technology.

14 The third case is congressional earmarks. There are
15 a number of those. There were absolutely none in 2011.
16 The last ones came out in 2010, and this project was
17 provided under a 2010 Congressional earmark. The earmark
18 was selected by a Congressional earmark initiated by
19 Senator Bennett. You can take a look at the conference
20 report and see this project listed in there.

21 Somebody asked me a little bit earlier about this
22 particular earmark, and if you go in the conference
23 report, you will not find a lot of detail. What you'll
24 probably find is a table that stipulates that the Office
25 of Fossil Energy is to fund the following earmarks, and

1 there will be a list. I think there is about 15 of them.
2 This will be listed as, I believe, the Viresco Utah
3 Project, and it was for about 2.5 million or 2.4 million
4 because there is a little tax that comes out at the
5 headquarters level.

6 Now, why do I bring all that up. Well, DOE is by
7 law now, that Congressional record is law, we are now
8 required in the law to implement the requirements under
9 the appropriation and that's exactly what we're doing.
10 But I also tend to point out that in this case this has
11 not been competitively evaluated, so DOE is really not
12 endorsing or opposing this program. We are simply
13 implementing what we must do under the law.

14 All right. You can see on the next bullet it's
15 provided through a cooperative agreement. We've
16 explained that a little bit, and you can see the
17 cooperative agreement was signed back in September 27th,
18 2010.

19 Next line. All right. What does this consist of,
20 funds, DOE share already mentioned is a little bit over
21 2.4 million, original earmark was 2.5 and a little money
22 taken back. Viresco is providing six hundred roughly
23 thousand dollars. Under the cooperative agreement it is
24 required that the participant also provide funding.
25 Basically what we're doing is we're reducing the risk of

1 the research while serving as a partner. Funding to
 2 Viresco is provided as reimbursement. I will tell you
 3 that out of all these research projects there is going to
 4 be a comprehensive final report that states all the
 5 results of the project and hopefully provides technical
 6 assistance and public benefit for future projects.
 7 That's really what our outcome is here. So, I can define
 8 this as a contract with the final deliverable being the
 9 final report and that's going to be my final point
 10 regarding this cooperative agreement.

11 All right. Last bullet, funds remain available and
 12 they do not expire unless the Viresco PI decides they no
 13 longer want to continue with the project. If, through
 14 this process that we are going through now, DOE
 15 determines that there are environmental concerns, that
 16 could cancel the project. And there may be other reasons
 17 it's unable to proceed. Maybe that the funding is
 18 inadequate; maybe that materials are unavailable; maybe
 19 they couldn't build the plant but that, once again, will
 20 result in termination from a request from the PI.

21 Next. All right. I want you to know about DOE's
 22 roles. They are very defined. In financial assistance,
 23 the recipient owns, manages and operates the project.
 24 DOE does not do this. We do not select the site. We do
 25 not select the technology in this case. They are

1 responsible for obtaining all the necessary permits and
 2 authorizations. They operate the project. They are
 3 responsible for all requirements and environmental
 4 aspects, etc, etc, and they also retire this project. So
 5 DOE will have no role in implementing any of these pieces
 6 of the project.

7 In this case DOE did conduct an assessment up front,
 8 and as Joe has mentioned, because of some public
 9 concerns, we at this point decided it was in everybody's
 10 best interest to basically conduct an EA, and I want to
 11 tell you that in most cases in these projects, we don't
 12 do this. And I will tell you that the money is coming
 13 directly out of my program. I have funded it completely,
 14 and hopefully things will work out whatever way they work
 15 out. I don't have any answers.

16 Next line. All right. Where are they now? Well,
 17 they've been allowed to do a preliminary design. I put
 18 up some numbers because I want to put things in
 19 perspective. I mentioned before the DOE does a variety
 20 of different projects, and we usually deal on a much
 21 larger scale.

22 I wanted to give you kind of an idea of where DOE
 23 sits in this. If you compare the number, 2.4 million,
 24 it's not a lot of money in the overall scheme of things
 25 when we're actually dealing with 440 million dollars a

1 year. This is a fairly small activity for us.

2 We're going to run about five tons per day of coal.
3 What does that mean. Is that big or little. Let's put
4 it into perspective. We're going to run about five tons
5 a day. That's about 424 pounds an hour of coal. Sounds
6 like a tremendous amount of coal.

7 Coal, a cubic foot of coal is about 80 pounds. So
8 basically what this is going to be an hour is five cubic
9 feet. What does that mean. It's probably a pile about
10 that big and just kind of a little circle. It's not much
11 in the scheme of things when DOE looks at a very large
12 facility. I wanted to point that out that it's not big.
13 If you want to put things in another perspective. A coal
14 fired power plant running about 500 megawatts a day uses
15 about 6,000 tons of coal per day. What is that. You all
16 probably have seen a coal train go by. That's called a
17 unit-train that contains 10,000 tons of coal, a hundred
18 cars, each car containing a hundred tons of coal. What
19 they burn in large facilities is about an entire train in
20 one day. So five cubic feet, we're at a very, very small
21 level here.

22 All right. I wanted to finally point out they're
23 prohibited from using Federal funds for detail design,
24 construction, or purchasing equipment. None of that has
25 been done to this point until the EA has been looked over

1 and final decisions made.

2 Last slide. Hopefully that gives you a little
3 overview of where the DOE fits in. I'm not going to get
4 into the technical aspect, but I just wanted to put in
5 perspective what DOE's role is, and how we're working to
6 implement this, and the fact that it is a law and we're
7 doing the best we can to do it safely and also provide a
8 significant amount of public benefit. Thanks a lot. My
9 contact information is up there. If you want to contact
10 me, feel free.

11 MR. ZAMBELLI: Thank you very much, Dan. Next
12 we'll have a project overview. Dr. Arun Raju from
13 Viresco Energy will give a presentation.

14 MR. RAJU: Good evening everyone. Thank you,
15 Joe. As you know my name is Arun Raju. I'm the director
16 of research for Viresco Energy. I'm also the principal
17 investigator for this project, and I'm just going to take
18 a few minutes to give you an update of where we are, and
19 I think pretty much all the information is you already
20 seen it. But I'll give you an update.

21 Next slide. The project details, the cooperative
22 agreement between NETL and Viresco was signed on 22nd
23 September 2010, and the budget is \$3,005,000 and the
24 federal share a \$2.4 million as Dan mentioned. And
25 performance period was initially proposed to be a year

1 starting on the first of October. This will be revised
2 based on the outcome of the NEPA process that we're going
3 through right now.

4 And the objective is to design, build and test a
5 five tons a day gasifier. This will test a new technology
6 that was invented at University of California at
7 Riverside, and we have studied it in lab scale for seven
8 to eight years, and now it's time to move forward to the
9 next step which is doing it on a pilot scale.

10 And what this pilot will accomplish is it will give
11 us a lot of engineering, chemistry and technical
12 information that we can then use to improve the process,
13 if necessary, or if it looks good we can then go to a
14 pre-commercial plant or sometimes to an actual commercial
15 facility. The location, of course, is going to be here,
16 and the starting up and the shake down testing and some
17 of the initial tests will be with coal.

18 But the objective is to test coal with biomass,
19 which is woody waste or plant material, and adding
20 biomass will reduce the overall greenhouse gas emissions,
21 and we are kind of focused on coal biomass mixtures at
22 Viresco Energy for a number of years. And we have done
23 some lab scale testing using lignite and other types of
24 coal mixed with woody waste. So at some point we hope to
25 test that here also. We have a new project manager, as

1 Dan mentioned, it's Darryl Shockley. He's here today,
2 and the engineering firm is Eltron.

3 Next slide. Some of the details of the project.
4 Like I said, our goal is to design and build this pilot
5 and operate it, get some data, do research on it. We
6 will evaluate the carbon conversion efficiency which
7 measures how much of the coal we are putting into the
8 reactor is being converted to a useful product. Some of
9 it is going to be spent on heating the process, supplying
10 the energy necessary. We have to evaluate what
11 percentage of the feed stock is being used effectively.
12 And the syngas composition which is gas we are making,
13 how much methane there is, how much CO2 there is, is very
14 important. We'll analyze the gas by taking a small
15 sample and we'll evaluate the performance of the reactor
16 overall.

17 We will do the heat balance, the mass balance, and
18 we will make sure that it performs as well as we think it
19 should. And the results we've seen in the lab scale test
20 and simulations and other research, we will check whether
21 it backs it up.

22 And I want to mention, again, that this project is
23 going to be completely a research facility and the goal
24 is to enhance the knowledge base and move the technology
25 forward gaining some information and engineering data,

1 and this is not attempted to be even -- it's not designed
2 in anyway to be converted into a commercial facility.

3 Finally, the status of the project. Like Dan
4 mentioned, we have permission from the Department of
5 Energy to use their funds to do project management and to
6 do front-end engineering design. The detailed
7 engineering design, any work related to construction,
8 ground breaking, fabrication or operation right now we
9 don't have permission to do any of that stuff. So we're
10 pretty close to getting the FEED completed. We have been
11 working on that for many months now.

12 In terms of permitting, we have a small source
13 exemption from the Utah Department of Air Quality, and we
14 are working on getting a general construction permit from
15 the Department of Water Quality. That's pretty much the
16 only permit that's pending. And, of course, we have to
17 apply for the building permit to the city. Like I said,
18 the construction and fabrication is going to be dependant
19 on the outcome of the NEPA process that we are going
20 through right now. That's pretty much it. Thank you.

21 MR. ZAMBELLI: Let me say a couple things before
22 we start the public comments portion of the hearing. I
23 received numerous scoping comments during the scoping
24 period. Some folks requested that the Department of
25 Energy prepare an environmental impact statement. As you

1 all know we chose an EA, an environmental assessment,
2 based on what we knew at the time and the decision was
3 made.

4 I need to tell you that the level of public
5 response, the level of distribution, the number of public
6 comments we received in this project, the scoping meeting
7 we had back in May and this public hearing, these are all
8 things that are typically provided in an environmental
9 impact statement and not in an environmental assessment.

10 So for this project we have gone far above normal
11 than what's been provided in most environmental
12 assessments. We felt it was important to do so, and we
13 definitely wanted to know what the public feels about
14 this project. We listened to your comments and concerns
15 in this area. So again, we want to let you know that
16 this is not a typical environmental assessment. It's
17 going far beyond that.

18 And also, secondly, there was some discrepancies in
19 the draft EA which discussed the water requirements for
20 this project, and some of you who looked at the pilot
21 plant schematic right here may have noticed that. And
22 we're not trying to hide anything. We were made aware of
23 the discrepancy and that will be corrected in the final
24 documents and the final environmental assessment. It's
25 something that the city has already agreed to providing

1 anyway. It's a slight discrepancy in the numbers there.
2 Okay.

3 Public comments portion. Now, I want to go over a
4 few rules for the oral comments session before we start.
5 This is the time for you, the public, is invited to give
6 oral comments regarding the draft environmental
7 assessment to DOE's proposed action, which is to provide
8 funding for this project and Viresco's proposed action.

9 Now, for those of you providing oral comments, we
10 ask you to keep your comments to within five minutes.
11 There will be a yellow card displayed at the four minutes
12 time mark, and then when the five minute is concluded,
13 there will be a red card displayed, and we ask you
14 conclude your comments.

15 If you have additional comments you'd like to make,
16 you may do so at the end after everyone else has had a
17 chance to speak. You can come back to the mike here and
18 continue. By doing so this makes it so everyone has
19 equal opportunity to speak tonight and provide comments.
20 Elected officials will speak first. I don't see any
21 elected officials.

22 MR. GRIESHABER: I think Mike Noel's name is
23 towards the end.

24 MR. ZAMBELLI: Mike Noel, okay. We'll be ready
25 here shortly. A transcript is being made, so speakers

1 should state their name and spell it for the record and
2 be sure to speak clearly. Again, a copy of the
3 transcript will be included in the final environmental
4 assessment.

5 We do not answer questions during the oral comment
6 period; however, we will talk with you individually after
7 the formal comment period ends. Written comments will be
8 given equal weight with oral comments, and you may
9 provide written comments instead of or in addition to
10 oral comments. Again, there are comment sheets that are
11 available at the rear of the room. You can fill out the
12 sheets, submit them tonight or anytime before the close
13 of the comment period on September 16th.

14 You can also provide comments by e-mail, regular
15 mail, through faxes, and lastly telephone calls. I ask
16 you if you call me to provide an oral comment, that this
17 could lead to misunderstandings and inaccuracies. So
18 that's not the preferred way to get comments. It's much
19 better if you speak tonight. We have the reporter here
20 and we're providing a mike.

21 Again, here's the comment form. It's available at
22 the back of the room on the table. Again, the comment
23 period officially closes September 16th, so please send
24 your comments to me. And something else. We have
25 already had requests for a time extension on the comment

Commenter 79 – Roland Malonado

31

1 period. DOE will consider those requests, but be aware
2 that DOE does not believe that more than 30 days should
3 be needed for commenting on the draft EA, but DOE will
4 consider all late comments to the extent practicable.
5 Remember, all comments are considered equally either oral
6 or written as we prepare the final environmental
7 assessment.

8 Now, I ask you to be respectful of everyone that is
9 giving a comment tonight, whether you support or oppose
10 the project, and treat everyone like you would like to be
11 treated yourself and give everyone a chance to speak.

12 The first registered speaker I will call is Mike
13 Noel, Utah State Repetitive. Mike, if you could come up
14 here.

15 MIKE NOEL: Would it be alright if I waited
16 until the end? I'd like to hear the comments of the
17 people that were here first.

18 MR. ZAMBELLI: If that's' what you prefer, yes.
19 The first comment is Roland Maldonado from the Kaibab
20 Piute tribe. If you could please be specific with your
21 comments, you and have five minutes.

22 PUBLIC ORAL COMMENTS

23 ROLAND MALDONADO: Hello, my name is Roland
24 Maldonado, M-A-L-D-O-N-A-D-O, I'm up here as a private
25 citizen. I don't represent the tribe. What I've noticed

79-01 |

Responses

Comment 79-01

Effects to climate and air quality are addressed in Section 3.5.2 of the Draft EA including ozone, SO₂ (for acid rain), and GHG emissions. The effects are expected to be negligible.

Commenter 79 – Roland Malonado

**79-01
(cont'd)**

1 is they don't have any or they are not monitoring any of
 2 the gases that come out of the stacks. I believe some of
 3 the gases once they combine will develop into acid rain.
 4 They also develop or are going to develop a large
 5 amount of ozone coming out of the stacks which they are
 6 not giving any consideration to. This is a greenhouse
 7 gas, which I believe there is global warming, and this is
 8 one of the problems.

79-02

9 Also my understanding is the ash after the coal is
 10 burned is going to contain Therium, which is a
 11 radioactive material. As we are up from the Nevada test
 12 sites, we already have a problem with radiation poisoning
 13 in our own communities here already. And we've had back
 14 then the government guys come by and say there is no
 15 problem with that. But this is a test facility, they
 16 don't know that for a fact, and they won't know that for
 17 30, 40, 50 years down the road, which is going to be our
 18 children's problem.

79-03

19 Being a traditional, we like to look above the
 20 generations to the future. That's where the effects are
 21 going to come in. I know it's not polite for us to leave
 22 problems to our children or grandchildren. We need to
 23 consider these things now on a timely basis.
 24 Also, from my understanding also, they are going to
 25 take the ash and put it into the Kanab landfill. I don't

Responses

Comment 79-02

As stated in Section 2.7.3 of the EA, the Pilot Plant would not emit radionuclides in quantities that would pose a health hazard based on the size of the proposed facility and the small concentrations of such materials in the feedstock.

Comment 79-03

The subject of this comment has been addressed in the response to comment number 15-09.

Commenter 79 – Roland Malonado

**79-03
(cont'd)**

1 think that has a hazardous material acceptability.
2 They're not going to line the pond with two liners,
3 they're only going to use one liner. Industry standard
4 is two liners.

79-04

5 They are not taking into consideration the things
6 that are left over after that water evaporates and gets
7 caught in the wind and is blown around. That's not one
8 of the things they have looked at. As a traditional
9 native, we go out and collect the plants and the paints
10 and other things from out in our community, which is
11 right here at the corner of Arizona and Kanab Creek.
12 That's where our community starts. We go all around
13 through there.

79-05

14 They don't know what's going to happen to the
15 plants. They don't know what's going to happen to the
16 materials, the paints and other things we collect and how
17 it's going to affect us. We burn these, eat these. The
18 same with our cattle, and you have the same issues.
19 What's going to happen with the grass when all this stuff
20 starts coming down. They don't know.
21 This is a pilot plant. It's an experiment. These
22 are things we are concerned with that they are not taking
23 into consideration. They feel that there is no adverse
24 impact because -- but they don't know. They are not
25 looking at as far as the radiation they don't -- they

Responses

Comment 79-04

The subject of this comment has been addressed in the response to comment number 13-01.

Comment 79-05

See response to comment 79-02 above.

Commenter 79 – Roland Malonado

**79-05
(cont'd)**

1 don't monitor it. They have no guidelines for it.
 2 Again, I have a limited amount of knowledge, but my
 3 understanding is like more than 20 joules which is a
 4 minute amount, that's the way they measure it is
 5 unacceptable. But like I said, they don't monitor it,
 6 they have no plans for monitoring it. They -- that's not
 7 one of their concerns. That's just one of the things the
 8 government doesn't do.

79--06

9 As a community, we are all part of this community.
 10 Our community doesn't start and stop at the state lines.
 11 It doesn't start and stop at the reservations. We all
 12 interact with another. We purchase things from one
 13 another, we eat the same foods, breathe the same air, get
 14 the same rain, all this goes into our ground water.
 15 Kanab Creek supplies everybody. It's going to go into
 16 the Jackson Flat reservoir. It's right next door to it.

79-07

17 The waste they put into the Kanab landfill over
 18 there it will go right into the reservoir. That's where
 19 you're going to be playing, swimming, fishing, all these
 20 things, all these activities, these grand activities they
 21 have planned, that's where all that's going to go. And
 22 from there it's going to go downstream. So we're all
 23 going to be affected by this. These are things they
 24 don't take into consideration. Thank you.

25 MR. ZAMBELLI: Next on the list is John

Responses

Comment 79-06

The subject of this comment has been addressed in responses to comment numbers 42-07 and 52-07.

Comment 79-07

The subject of this comment has been addressed in the response to comment number 15-09 and 40-27.

Commenter 80 – John Jefferis

1 Jefferis, and I apologize if I don't get your names
2 pronounced correctly. Please state your name and spell
3 it for the reporter.

4 MR. JEFFERIS: John Jefferis, J-E-F-F-E-R-I-S.
5 My name is John Jeffries, resident of Kanab, fairly new
6 in Kanab. I felt a little compelled to say just a few
7 words here tonight before everybody. This is America.
8 Isn't it great anybody can come up and say what they
9 want. You can disagree with me, and nobody is one
10 hundred percent right, correct all the time. So this is
11 good stuff for me. And I also wrote this down because
12 I'm getting older and keeping the train of thought
13 sometimes is kind of difficult.

14 I have been in Kanab two months when I read in the
15 weekly newspaper, The Sun, that this plant was being
16 authorized, at least the land was being authorized, and I
17 thought to myself at that time for the life of me, as a
18 person who chose to come to Kanab because of the national
19 parks, the scenery, the air and so forth, I did not
20 understand why anyone thinking that locating the coal
21 gasification process in the proximity of a small desert
22 tourist town, Native American reservation, three national
23 parks, two national monuments, a national recreation area
24 and state parks is a good idea.

25 So I decided to research because to me it didn't

80-01

Responses

Comment 80-01

The subject of this comment has been addressed in the response to comment number 8-01. Section 3.6 of the EA discusses the potential impacts to groundwater.

Commenter 80 – John Jefferis

36

1 seem like the best of ideas. I also found during the
2 research that a new word for an old word, syngas, used to
3 be called in the 1800s town gas, which was used for lamp
4 lights, stoves, cooking, you name it. It was used like
5 we use natural gas or propane.

6 Before it was over in the 1800s early 1900s, 50,000
7 gasification plants were located across this country and
8 were notorious for polluting the ground water. Some of
9 those ground water pollutions to this day have not
10 cleaned up yet.

11 There is also a Blue Billy waste solid is what it
12 was called, Blue Billy. It was advertised to keep your
13 driveway weed free. It was a weed killer. It was a
14 byproduct of the plant, and it was a waste. A
15 characteristic musty bitter almond smell associated with
16 the cyanide gas which it came from.

17 As these folks have said already here tonight that
18 they are behind this a hundred percent. DOE is behind
19 this one hundred percent. If it's not going to be here,
20 it's going to be somewhere, because I got on DOE's site,
21 and one of their program performance goals is by 2015
22 complete testing of the ionic membrane 150 ton per day
23 intermediate scale testing. That is one of the
24 performance goals of DOE. So they are behind this one
25 hundred percent.

Responses

Commenter 80 – John Jefferis

80-02

1 I just still question, my question is necessarily
 2 why this location. And as fairly a new resident, I do
 3 know down the road here about five miles there is a
 4 rather large industrial area up north of Fredonia. I
 5 don't know why it couldn't be more appropriate there.
 6 But anyway my specific concern as I read your draft, I
 7 did have -- I also wrote a letter to the scoping process
 8 concerning a couple of more areas. The one area I
 9 noticed that I read some things here on surface water,
 10 and it's stated here this is a resource not considered in
 11 detail. And I would suggest maybe we ought to revisit
 12 that because the surface water section did not mention
 13 that I saw that the Jackson Flat Reservoir, 4,228 acre
 14 foot reservoir as part of surface water. And it was not
 15 in that section, and I could not understand that.

80-03

16 Also, my own personal thinking here is in the desert
 17 environment like this, non-perennial water flows were not
 18 also considered. My experience in the desert is that any
 19 washes, gulches or whatever flows somewhere. It's maybe
 20 not flowing continually, but it does flow somewhere. It
 21 may be Highway 89A. I don't know whether it would reach
 22 Kanab Creek or the reservoir, but all gulches and washes
 23 do flow somewhere. And I think that needs to be
 24 considered. And that's one of the areas, I believe, that
 25 maybe you ought to revisit that area of the assessment.

Responses

Comment 80-02

The subject of this comment has been addressed in the response to comment number 8-01.

Comment 80-03

As discussed in response to comment number 56-23, the subject of surface water has been added as Section 3.12 in the Final EA with expanded discussion on the potential impacts to this resource. As explained in response to comment number 15-16, Jackson Flat is not yet a water body that has been cataloged by the state; however, potential cumulative impacts to this reservoir are discussed in Section 4.2. Regarding non-perennial flows, Viresco would construct a stormwater retention structure that would be designed to hold stormwater runoff from the project, and minimize the potential for flooding and contamination from runoff. As discussed in response to comment number 40-27, Viresco would be required to prepare and maintain a SWPPP, which would minimize the potential for contaminants reaching any water resources, including non-perennial streams.

Commenter 80 – John Jefferis; Commenter 81 – Victor Cooper

1 Thank you. That's all I have.

2 MR. ZAMBELLI: Next commentor is Victor Cooper.

3 VICTOR COOPER: My name is Victor Cooper,
4 V-I-C-T-O-R, C-O-O-P-E-R, I live here in Kanab. My wife
5 and I run a cafe. I spoke at the previous scoping
6 meeting about my object and concerns about this plant. I
7 agree with what Roland had to say as well, but I have
8 specific questions here about the draft EA, and these
9 lines were taken exactly from the copy that was sent out
10 to us.

81-01

11 During operations, daily spending by employees would
12 positively effect businesses in the area. And during
13 operations I believe there are going to be nine
14 employees. And I spoke to Mr. Guthrie before the
15 meeting, and I asked him what those nine jobs would be.
16 And he mentioned from local hires it would probably be
17 forklift operator, perhaps maintenance person of some
18 sort, handyman, probably a couple of other jobs, couple
19 of specialists who train engineers, but it says here
20 these expenditures come by the gasoline, automobile
21 servicing, food, beverage and laundry and other retail
22 purchases undertaken in the immediate area.

23 I would make a statement that those expenditures are
24 undertaken by a lot of people here, visitors, residents,
25 and my question is I've heard the jobs come in would be

Comment 81-01
Comment noted.

Responses

Commenter 81 – Victor Cooper

**81-01
(cont'd)**

1 family sustaining jobs, new jobs in this area, but at
 2 what cost. And a lot of people whatever jobs, we need to
 3 take them because we really need jobs, but if we're going
 4 to -- I wish this -- I know this isn't a picture of the
 5 site, but I wish we had a picture of the site with the
 6 plant photoshopped in so we could see what it actually
 7 looked like and is that something we really want to this
 8 area.

81-02

9 And I'll go back to the question other people have
 10 made. Why Kanab. Why do they need this plant in Kanab.
 11 I just I don't believe it fits in. I don't believe it
 12 will benefit the economy, and I think the reasoning in
 13 this EA is kind of dubious that in addition secondary
 14 jobs related to the increased economic activities
 15 stimulated by the project may also be created. What does
 16 that mean? What kind of secondary jobs?

81-03

17 We are not getting a lot of answers for this.
 18 Mr. Guthrie was nice enough to speak to me before the
 19 meeting. I asked him about the height of the stack.
 20 This is something that has bothered me since the planning
 21 commission approved the conditional use permit. The
 22 conditional use permit was strictly to determine whether
 23 a height variance would be granted, and yet our planning
 24 commission spent months working on it. I went to three
 25 of the meetings. They issued a conditional use permit

81-04

Responses

Comment 81-02

As discussed In response to comment number 15-18, Figure 3-6 has been revised in the Final EA (now Figure 3-7) to show approximately how large the Pilot Plant would appear from the same vantage point in comparison to the visibility of nearby manmade features, including the Kanab Municipal Airport, the Kane County Public Safety Facility, and the Kane County Landfill.

Comment 81-03

The subject of this comment has been addressed in the response to comment number 8-01. Secondary jobs related to the increased economic activity stimulated by the project may also be created. These secondary jobs would include those in automobile servicing, food and beverages, laundry, and other retail purchases undertaken in the immediate area by the new Pilot Plant employees because of convenience and access during the course of the business day.

Comment 81-04

As stated in response to comment number 51-07, the wording on page 1 of the conditional use permit authorizes a 60-foot tall gasifier with a 67-foot tall exhaust structure "plus the additional height of required and approved flare enclosures". The Final EA has been revised to clarify these dimensions. The maximum height of the exhaust flare structure, including the enclosure structure, would be approximately 72 feet. It is not unusual for specific details of a final design to be undetermined during the planning stage of a project, which is when environmental studies under NEPA are completed. Therefore, impacts may be based on reasonable assumptions about design conditions and would remain valid provided that the final design does not substantially alter the assumptions and introduce new impacts. In the case of the flare enclosure, the exact size and resulting effect on the height of the flare exhaust structure is not known with certainty. DOE has determined that the enclosure may add approximately 5 feet to the height of the flare structure with a margin of uncertainty amounting to a few feet, which DOE does not consider would cause a substantial effect on the visibility of the structure.

Responses

Commenter 81 – Victor Cooper

40

1 without knowing the actual height of the stack. It was
2 the height of the stack plus the flare enclosure. If
3 we're going to approve it, then we should know these
4 things that we should know. And if they didn't have that
5 information, they should have gotten the information
6 before they approved the conditional use permit. They
7 did not do that. That's not negligence. I'm not saying
8 don't do it, because if you have a process and we're
9 going through a process, and you require people to
10 provide the information and that information should have
11 been provided. It was not. And we still don't know. I
12 asked several people. Maybe it will be four feet, Joe
13 here told me. Well, he's written lot's of EA's, and
14 frequently that doesn't have that information. Then why
15 are we going through this process.

16 This is our tax money, and we have the right to have
17 answers, and then the DOE can't get answers to that
18 question, then why are we doing this. I'm not saying it
19 shouldn't be done, but it's a process that's supposed to
20 be followed and a lot of details to it, and we don't have
21 any answers. Mr. Guthrie says it may be lower than they
22 first suspected, so that's a big concern of mine. The
23 whole process from the city's end was not undertaken in
24 the most reasonable way from the beginning. And I think,
25 again, when the zoning change was brought up said from

81-04
(cont'd)

E-253

Commenter 81 – Victor Cooper; Commenter 82 – Marlene Barnes

Responses

**81-04
(cont'd)**

1 light industrial or from agricultural to light
2 industrial, there is no mention of coal gasification
3 plant. And that may have met the legal requirement, but
4 that's a long way from telling people what is really
5 going on. And my point is that if it's open and
6 everything is on the up and up, tell people what's coming
7 in. And you know, that wasn't done because there were
8 too many questions to be answered and many of them have
9 still not been answered.

81-05

10 So my question about the socio-economic impact. I
11 think there are other ways for the jobs that are going to
12 be provided and what the actual job benefit will be, we
13 can do other things and not have to potentially ruin our
14 health and our views and tranquility of this town which a
15 lot of people move here for. So thank you very much.

82-01

16 MR. ZAMBELLI: Our next commentor is Marlene
17 Barnes.
18 MARLENE BARNES: I'm Marlene Barnes,
19 B-A-R-N-E-S; first, M-A-R-L-E-N-E. I agree with the last
20 three speakers, and my firm comment is that this project
21 does not belong in Kanab. The first speaker, Roland,
22 brought up the fact and the couple of other people

82-02

23 mentioned that the plant is going to be very, very close
24 to the Jackson Flat Reservoir. When I read this entire
25 thing, every time ground water was mentioned, it was

Comment 81-05

Comment noted.

Comment 82-01

The subject of this comment has been addressed in the response to comment number 8-01.

Comment 82-02

As explained in response to comment number 15-16, Jackson Flat is not yet a water body that has been cataloged by the state; however, potential cumulative impacts to this reservoir are discussed in Section 4.2.

Commenter 82 – Marlene Barnes

42

**82-02
(cont'd)**

1 always said that it was a mile point one away from the
2 plant. Never did they talk about the fact that the
3 Jackson Flat Reservoir is a quarter of a mile from this
4 plant.

82-03

5 Now, Victor just talked about the fact that he
6 wished that the plant was photoshopped on this diagram.
7 Well, I can give you a visual. I counted the number of
8 blocks to the ceiling. There are 30. The scaffolding to
9 this plant is going to be 60 feet high. The stack is
10 going to be mostly likely 72 feet high. That's twice
11 this building plus another 12 feet. Now all of that to
12 burn this much sounds a little bit much to me.

82-04

13 Secondly, beyond the size of the plant, throughout
14 this document they are referring to an expanded operation
15 of 130 days, 90 of which could be constant 24/7 testing.
16 Now, they were planning to then at the 130 day testing
17 level, they are going to be putting the ash in our
18 landfill, they are going to be putting waste water in our
19 water treatment ponds, they were going to be grinding
20 coal on site, all of these things are not being
21 publicized. If you read this document, it is in here.
22 So I say please, please, inform yourself. Don't just
23 have people gloss over things. This is great for Kanab,
24 this is going to be creating nine jobs, whoa. This is
25 going to be destroying Kanab. Thank you.

Responses

Comment 82-03

As discussed In response to comment number 15-18, Figure 3-6 has been revised in the Final EA (now Figure 3-7) to show approximately how large the Pilot Plant would appear from the same vantage point in comparison to the visibility of nearby manmade features, including the Kanab Municipal Airport, the Kane County Public Safety Facility, and the Kane County Landfill.

Comment 82-04

Comment noted.

Commenter 83 – Jesse Johnson; Commenter 84 – Barbara Kropf

1 MR. ZAMBELLI: Our next commentor is Jesse
2 Johnson.

3 A J-E-S-S-E, J-O-H-N-S-O-N. I did go out to
4 the dump. I've got a four-wheel drive. This is an
5 inclined road where you go to the dump. I've seen
6 water runs off the dump down and toward the lake.
7 We have shotguns going off all week long out there
8 shooting lead shot pellets that goes down to the
9 lake. Now we're going to att toxic ash to the lake
10 and make a toxic soup. Maybe our claim to fame will
11 be a four-headed fish that comes out of the
12 reservoir. Maybe some of the jobs will be cleaning
13 this toxic mess we're about to make.

14 I'm not very up -- on I'm computer ignorant. I
15 can't spell Google. And I just looked it up. I was
16 going to ask a question. The question I was going to ask
17 is how many toxic sites right now has DOE signed off on
18 in the United States are online. I got to five hundred
19 and I got tired. Five hundred sites these guys have
20 signed off on. I can't recall every toxic known to man.
21 They set these projects up, they sign off on them at our
22 expense. That's all I can do.

23 MR. ZAMBELLI: Next commentor is Barbara Kropf.

24 BARBARA KROPF: In the 1970, '71, '72, '73 we
25 were tax preparers at H&R Block office in St. George.

83-01

Responses

Comment 83-01

The subject of this comment regarding toxic ash being placed in the Kanab County landfill has been addressed in the response to comment number 15-09. DOE disputes the commenter's allegation that DOE has "signed off" on numerous toxic sites in the United States. DOE has no regulatory jurisdiction with regards to the cleanup of contaminated properties; such sites are regulated by the pertinent federal or state agency.

Commenter 84 – Barbara Kropf

44

1 And we had many, many people from Kanab come over. We
2 got to meet many, many people. But we also got to meet
3 the workers out at the Seeburg plant that were putting
4 the light lines, the poles all the way to California so
5 they could get electricity from what they build out
6 there, and so we got to meet all those people. And then
7 we decided to come see you, and so we did.

8 We came over, we ended up buying a motel, selling
9 that H&R Block building here and meeting many people
10 through the H & R Block and also becoming part of the
11 neighborhood. We love it here. We like the warmth, the
12 friendliness. We were both raised in a small town. I
13 met many people here, Mr. Noel, one of our customers, but
14 anyway we really love the area, and it is our haven.

15 That's the point I want to make. We have an acre
16 there in Kanab there. I end up going out every week to
17 the dump to dump the weeds, the seeds, the trees, the
18 limbs, whatever. But going out there and watching what's
19 being built out there and thinking about this whole thing
20 being built there, every time I go by, my heart just
21 breaks I really don't want the change here. To me it's
22 going to be a big monster. I see it down the road, but
23 it's waiting to roll. I'm waiting to see this develop
24 and be beyond our control. But it's unknown, isn't it,
25 how far it's going to go. But it really could overpower

84-01

Responses

Comment 84-01
Comment noted.

Commenter 84 – Barbara Kropf; Commenter 85 – Catherine Ives

Responses

Comment 84-02

The subject of this comment has been addressed in the responses to comment numbers 15-21, 57-12, and 63-08.

45

84-02

1 us here.

2 There is quite a water problem here. We're the
3 second state with the lowest rain. Arizona being the
4 first. And so this rain fall, this water is a problem
5 here, and we can't solve it. Who's going to furnish the
6 water for this place when it's built? Is it going to
7 come out of our system up here, because Kanab, the
8 Jackson property there, will they be able to give them
9 all the water they need as they grow. Anyway, there is a
10 lot of growth potential in Kanab. I think we're going to
11 be discovered but not this way. Anyway, thank you.

12 MR. ZAMBELLI: Next commentor is Catherine Ives.

13 CATHERINE IVES: Catherine Ives, I-V-E-S,
14 C-A-T-H-E-R-I-N-E. And I have to say because I know
15 there are a lot of local officials here, and I've been in
16 this town for a long time and everyone knows where I work
17 and so forth, and so I say please, do not be mad at my
18 employer because of anything I might say. This has
19 happened before, we're all very different where I work,
20 and some people are in favor of building this plant and
21 think it's a good idea for the country, and some people
22 have -- most have said absolutely no, and that includes
23 the organization, has absolutely no official stance on
24 this project. They only deal with the welfare of animals
25 and that's it.

Commenter 85 – Catherine Ives

46

1 Some people are concerned about it. So if anybody
2 wants to know anything more about the stance of Best
3 Friends on this plant or anything else, just go call John
4 Paulus up there. He talks to people, and he's very nice.
5 So don't be afraid of calling him.

6 But I just wanted to say that the problem with the
7 environmental assessment document is that this project
8 hasn't been built yet. How do you know what the plant is
9 going to do when it hasn't been built yet. If it were
10 built, then we could do all kinds of studies to see if it
11 was harmless or not, what effect it was having on
12 everything, but it's not here yet. So we don't know.

13 So I have to say -- there is no pun intended -- once
14 this plant is built, then we all get to be guinea pigs
15 for this plant. And I always carry -- when I'm
16 commenting, I always carry my trusty asthma inhaler with
17 me like I did when I commented last time. I'm an
18 asthmatic and a very bad asthmatic I almost died of
19 asthma and bronchitis in 1992. So I'm really concerned
20 about this plant even though it's a small one, we just
21 don't know what it's going to do.

22 As Victor said, and some other people, how high is
23 this -- I have to apologize, I couldn't get here earlier.
24 I couldn't ask any questions. But we don't know how high
25 that stack is going to be. I was in that planning

85-01

85-02

85-03

Responses

Comment 85-01

The proposed Pilot Plant is intended as a demonstration facility, not an experimental facility. The plant would demonstrate the steam hydrogasification reaction process at a size that would provide economic performance data adaptable to a commercial-scale facility. Basic experimentation for the process was already completed in a laboratory-scale unit, but it is not directly scalable to a commercially economic size. NEPA requires federal agencies to conduct appropriate environmental reviews as part of their decisionmaking for proposed actions. The Draft EA, as updated in the Final EA, appropriately describes the anticipated impacts of the proposed project in sufficient detail to support decisionmaking for DOE's proposed action.

Comment 85-02

The subject of this comment has been addressed in the responses to comment numbers 13-01, 21-02 and 32-05.

Comment 85-03

As stated in response to comment number 51-07, the wording on page 1 of the conditional use permit authorizes a 60-foot tall gasifier with a 67-foot tall exhaust structure "plus the additional height of required and approved flare enclosures". The Final EA has been revised to clarify these dimensions. The maximum height of the exhaust flare structure, including the enclosure structure, would be approximately 72 feet, not 100 feet. See response to comment 64-05, which addresses the same subject.

Commenter 85 – Catherine Ives

**85-03
(cont'd)**

1 commission meeting where they issued a conditional use
2 permit, but they didn't know how high the stack was going
3 to be. It could be -- in the document it said it was
4 going to be around 67 feet. But with the flare assembly,
5 which we don't know anything about yet, I think it could
6 be as high as 80 feet. Maybe the stack could turn out to
7 be as high 100 feet or maybe not. But we don't know how
8 it's going to be.

85-04

9 The most important thing is somebody commented on
10 this last time we commented, we really don't know what is
11 going to be coming out of that stack because the plant
12 hasn't been built yet. In the document it says things
13 like water and oxygen and stuff, a bit of carbon dioxide,
14 maybe. But what if toxic stuff comes out of this stack
15 and there you go. Some people are concerned about this
16 plant because they come from a place like I do. I come
17 from New York City. We know what industrial filament
18 looks like. Some people are concerned about this plant
19 because they come from here and we've never had anything
20 like that here before. And like everybody else, I don't
21 think this plant fits in with our community.

85-05

22 I'd be happier if it was -- research has been done
23 in California, Riverside. I think that it would be
24 better if that plant were built there, because then if
25 anything went wrong, there would be more staff and

Responses

Comment 85-04

The subject of this comment has been addressed in the responses to comment numbers 13-01, 21-02 and 40-10.

Comment 85-05

The subject of this comment has been addressed in the response to comment number 8-01.

Commenter 85 – Catherine Ives

**85-05
(cont'd)**

1 engineers and professors would be there to deal with it
2 over there. And we don't know -- we don't know what it's
3 going to do.

4 In the document it says we have a well-staffed fire
5 department. No, we don't have a staffed fire department.
6 We don't have a staffed fire department at all. We only
7 have a volunteer fire department. When I sold my house,
8 I was told to get very good fire insurance because, if
9 anything, a fire could happen. By the time they can get
10 themselves together and arrive at your house, it will be
11 burned to the ground.

85-06

12 And so -- and then it said in the draft
13 environmental assessment there are other units that were
14 available, and they mentioned one in the east Zion
15 National Park and one up in Cedar Mountain, and these are
16 all a hour and a half or two hours away. They're not
17 going to be able to help us.

18 We have the hospital. They described the hospital
19 in the document, and our hospital everybody around here
20 knows our hospital is, you know, it's like if you have
21 the flu or they deliver an occasional baby or, you know,
22 if you have a cold or something, but if there is anything
23 really wrong with you, they air flight you to St. George.
24 So supposedly, sorry to be an alarmist like this, but
25 suppose there is a big explosion and people were burned

Responses

Comment 85-06

The subject of this comment has been addressed in the response to comment number 43-07.

Commenter 85 – Catherine Ives; Commenter 86 – Bill Cole

**85-06
(cont'd)**

1 badly, you know, they would have to be life flighted all
2 the way to St. George, and we just hope that they would
3 survive. Is someone holding up a card? My time is up.
4 Okay. I can start up again afterwards. Thank you very
5 much.

6 MR. ZAMBELLI: The next commentor on my list is
7 Bill Cole.

86-01

8 BILL COLE: Bill Cole, C-O-L-E. I know there is
9 a lot of very sincere people in here, and some of you
10 have bad hearing such as I do. But I know that there
11 have been several of the people who spoke today, and I've
12 known quite a bit -- and I know that they're sincere, but
13 I believe that most of the people in here that are
14 complaining the most about this project keep repeating
15 over and over and over. And I've been to a lot of the
16 meetings and they say, well, we haven't thought about the
17 water. Nobody said anything about the water. Nobody
18 said anything -- we've been saying this for months and
19 months and months and the papers and in these meetings.

20 I think some of you people are getting led around
21 and pushed around by some people from California where
22 I'm from. I came from California about four years ago
23 and I like Kanab. I still like Kanab, but some people
24 have come here from California, I think purposely to push
25 the people in Kanab in a whole different direction that

Responses

Comment 86-01
Comment noted.

Responses

Commenter 86 – Bill Cole

50

1 they don't want to go. People that have been living here
2 all their lives, yet the people that I believe a lot of
3 them had come here from California are trying to push
4 people around in Kanab and push them out of Kanab, if
5 possible, for whatever agenda that they've got. And you
6 all know the names, you know the names, but this is my
7 take on it.

8 I believe that these things have been discussed over
9 and over and over. And this lady here mentioned the
10 water. She talked like nobody had ever heard of these
11 things before. And I know that people say, well, as
12 Catherine -- and I know and I love Catherine -- but she
13 says how do we know about -- the thing hasn't been built
14 yet. I have people telling me not to go to the medical
15 doctors because I can get cured better with herbs and
16 certain diet. I don't believe that. And I know that
17 Catherine believes what she said. We don't know what's
18 going to happen because it's not been built, but in my
19 opinion, a lot of these people are being led around and
20 pushed around and trying to manipulate the people that
21 have lived -- and not me -- trying to push people around
22 who have lived here all their lives. I don't think it's
23 right, I don't think it's fair. I think you're wrong.

24 MR. ZAMBELLI: Do we have any additional
25 comments?

86-01
(cont'd)

E-263

Commenter 87 – Roger Hoverman

51

1 My name is Roger Hoverman, H-O-V-E-R-M-A-N. I'm an
2 American first; Kanab, second. I can live anywhere in
3 the United States and still have the same voice, and it
4 doesn't matter how long I've lived here. This is about
5 the EA. Last meeting was about Kanab. This EA is
6 deficient in several areas in my opinion.

7 The environmental consequences section, especially
8 to socio-economics, does not specify whether impacts are
9 short-term or long-term. Impacts were evaluated as minor
10 in some scales, as adverse, beneficial in other scales,
11 and there was no relative comparison of esthetics, for
12 example, at the local scale. It was at the state scale.

13 The environmental consequences section for
14 economics, taxes and revenues, the first statement on one
15 of the paragraphs, I don't remember what page it was,
16 mentioned property tax revenue. This is on state land.
17 What property taxes are going to be collected. I don't
18 get it. Is the building going to be taxed? I could be
19 uninformed, but I don't know.

20 The point here is that this document, even though
21 the scale of the project often gets done with much, much
22 less intense analysis and/or effort. Thank you very
23 much, but the NEPA process says short-term, long-term,
24 adverse, beneficial and cumulative. I didn't see that.
25 I saw a lot of statements that said, well, it's going to

87-01

87-02

Responses

Comment 87-01

As stated in Section 3.10.2.3 This would have a short-term, minor beneficial impact on employment in the Kane County area. "Aesthetics" is not a resource that readily lends itself to quantitative impacts, particularly when considering visibility of structures by individuals. Because the project would be a private enterprise (not owned by DOE) on property leased by SITLA, it would be subject to commercial tax assessments as confirmed by the Kane County Treasurer.

Comment 87-02

The subject of this comment has been addressed in the response to comment number 57-10.

Commenter 87 – Roger Hoverman; Commenter 88 – Mike Noel

Responses

**87-02
(cont'd)**

1 be this would be this, and no back-up. Specific example
2 would be -- it escapes me.

87-03

3 Anyway, the one section dealt with Kanab's capacity
4 to supply water to this plant. I believe it said this
5 plants usage at the 30 days operational level was going
6 to be .03 percent or .04 percent or .06 percent, I can't
7 remember for sure. That's unimaginable to me. Where is
8 the backup for that information? I mean it's not in the
9 document. Where did that number come from? When you
10 make a statement like would effect beneficial, you should
11 be able to back it up with something. It should tie
12 directly to the previous narrative.

87-04

13 One last thing is -- senior moment -- they are
14 getting more frequent. I would like you to take a --
15 DOE, I would like you to take another look at the
16 document. I appreciate the effort so far. Joe and his
17 crew have had a lot of experience. I appreciate that.
18 I'm not trying to bad mouth you, you're doing a good job,
19 but bolster these areas. And I understand this is a
20 small potatoes project. The point is NEPA doesn't
21 discriminate. What is required is required for every
22 size project no matter how big or how small. Thank you.

23 MR. ZAMBELLI: Our next commentor is Mike
24 Noel --

25 MIKE NOEL: Mike Noel, N-O-E-L. I think most of

Comment 87-03

Comment noted.

See Section 3.8 Utilities for a discussion on water usage which details how numbers and percentages of usage were calculated.

Comment 87-04

Comment noted.

Commenter 88 – Mike Noel

53

1 you know me. I'm a state representative. I represent
2 Kane County, Wayne County, Beaver County Sevier County,
3 and Washington County. I've been a representative for
4 almost ten years now, elected five times in the Utah
5 house.

6 I serve in the house as a member of the public
7 utilities technology committee, so I hear a lot of these
8 issues that deal with energy and power, so I have
9 background in this. My previous life with the BLM. I've
10 worked on HEMA compliance. I have testified in federal
11 court as an expert witness on the National Environmental
12 Policy Act and a team leader on the Andalex Coal Project,
13 probably have written 100, 150 environmental sections in
14 my life. Very good job on this. Excellent job by DOE,
15 and I think they covered all the bases and then some. I
16 think an EA like this with minimal documentation would
17 probably have been done in a lot less time and paperwork.

18 State of Utah's policy on gasification as we embrace
19 gasification, gasification is one of the technologies
20 that the governor and legislature look for as part of our
21 overall energy policy. Why is that. Because this
22 project which came out of the center for the College of
23 Engineering, Center for Environmental Research and
24 Technology and was specifically developed by an engineer
25 by the name of Dr. Joe Norberg who came out of Ford Motor

88-01

Responses

Comment 88-01
Comment noted.

Responses

Commenter 88 – Mike Noel

54

1 Company, and his whole purpose was to produce fuels that
2 were less toxic to reduce pollution to the environment,
3 and I think he's accomplished that.

4 Now we're talking about burning this stock, what
5 happens with this stock. Right now we are flaring. If
6 you hook this up to what we call the Fischer-Tropsch
7 process, something that was invented by some Germans back
8 by the end of World War II, when the allies had knocked
9 all their supplies away, you could actually reduce the
10 emissions, turn it into a fuel, jet fuel, diesel, other
11 types of fuel, gasoline, and you can reduce the emissions
12 to zero. You can collect all those things we've talked
13 about here today and many of these products could be
14 reused. They're products that we use for fertilizers.

15 I'm a farmer. I put about 10,000, 15,000 bales of
16 hay a year, and I run a hundred head of cows. So I know
17 how important fertilizer is. Fertilizer right now is at
18 an all-time high of \$700 a ton. Three years ago it was
19 \$200 a ton. That's why food prices are sky high. That's
20 why hay prices are double. That's why cattle prices have
21 been at a historic high because of thousands of people,
22 the world needs food. 75 million new people on this
23 planet every year.

24 And we are in direct competition with the Chinese.
25 They're building a coal fire power plant every month. I

88-01
(cont'd)

E-267

**88-01
(cont'd)****Commenter 88 – Mike Noel**

55

1 flowed down the Yangtze River a few years ago and saw
2 barge after barge after barge of coal going up and
3 products from the coal stocks coming back down. They
4 were also doing a little nuclear, too. They are building
5 some of our solar reactors. I support renewable energy.
6 But at this point in time, we do not have the necessary
7 means to convert everything to renewable energy without
8 base load supply. This is why I support this project.

9 People say it's only going to create ten jobs. What
10 if you're one of those people that has that job? Would
11 you want to eliminate that job? I hear this all the
12 time. It only creates ten jobs. Well, people moved
13 here, they came here from another area. Many of you are
14 retired drawing a salary. What if we eliminated your
15 salary. It's very important to those people that have
16 that job. It is very interesting. I sit on the
17 governor's council on balancing resources. I served with
18 a guy by the name of Ted Wilson. You may remember Ted.
19 He ran for U.S. Senate and is the mayor of Salt Lake
20 City. He also sat on the board of directors for SUWA.
21 He strongly supported gasification. He can't figure out
22 why there is such a big fuss about this down here with
23 the amount of emissions.

24 You saw what the professor said. He is a professor
25 by the way. He taught college, he got his PhD. Five

Responses

Responses

Commenter 88 – Mike Noel

56

1 cubic feet, yet you see people put this in the newspaper
2 as Bill said and show the smoke stacks at the Lake Powell
3 plant down at the power project in Page, Arizona. That's
4 absolutely false. Any attempt to deceive people is a
5 lie. That's what I've seen happening in this community
6 over the last couple of years on this project, an
7 outright attempt to deceive people in this area of what
8 this project is and what this project isn't.

9 This EA brings it into focus. It tells us what it
10 is and what it isn't. These people are paid to do this
11 job. They are not out to get in bed with Viresco Energy.
12 They have to evaluate these things on the basis that they
13 have.

14 We brought Richard Borden in here. I helped bring
15 Richard Borden in here. He is a native of Kanab. He has
16 a PhD. He is a very intelligent individual. He is one
17 of the top researchers in gasification. If he brought a
18 Fischer-Tropsch processor down here from the Iowa
19 National Laboratory, we would have zero emissions on
20 this, and that's not part of this proposal. But in the
21 future is there ever going to be a full gasification
22 plant here, Barbara? Never.

23 I promise you that if they tried to build one they
24 couldn't build one because there is not enough room
25 there. I would be the first one to step up and say no we

88-01
(cont'd)

E-269

Commenter 88 – Mike Noel; Commenter 89 – Alan Beebe

**88-01
(cont'd)**

1 don't need a coal gasification full scale production
2 facility in the city limits of Kanab, period. I agree
3 with that.

4 But why is it here in southern Utah? We have the
5 largest untapped reserves of coal in the entire United
6 States sitting right here underneath the Kaiparowitz
7 Plateau. Low sulfur, high BTU coal and can be utilized
8 to provide power, it can provide phosphate potassium for
9 our kids to grow food, and can also supply energy. Why
10 would we want to turn our backs to that? Mr. Guthrie has
11 been all over the world on this project. He's been to
12 South Africa, he's been to Germany, Brazil, he's been in
13 Turkey, he's been in Israel, and he has brought a lot of
14 people here to evaluate this technology. I hope it
15 works. I sincerely hope it works. Thank you for your
16 time. I appreciate it.

17 MR. ZAMBELLI: According to my list all
18 registered commentors have had a chance to speak this
19 evening. If anyone here registered and I failed to call
20 your name, please say so now. Okay. If there is anyone
21 that has not registered and would like to make a comment
22 this evening? Yes, sir.

23 ALAN BEEBE: Alan Beebe, A-L-A-N, B-E-E-B-E.
24 The first thing I'd like to say is I've been involved
25 with watching this project go from the beginning. No one

89-01

Responses

Comment 89-01

The subject of this comment has been addressed in the response to comment number 8-01.

Commenter 89 – Alan Beebe; Commenter 90 – Catherine Ives

**89-01
(cont'd)**

1 has ever tried to influence me from any state, let alone
2 California. So that's, you know, having insurgents under
3 the bed, that's just not true. Only thing I have to say
4 is that I don't believe that this should be built in
5 Kanab. I like the environmental assessment in that it
6 gave a good overview of the operating of the plant. A
7 lot of the things that were in the EA should have come
8 out from the beginning. It would have helped in the
9 understanding. That's all I have to say, thanks.

89-02

10 MR. ZAMBELLI: Any other unregistered commentor
11 like to speak this evening? Okay. Those that have
12 spoken before, anyone that would like to continue we'll
13 give you an additional five minutes.

90-01

14 CATHERINE IVES: Catherine Ives, I-V-E-S. I
15 just want to say, I guess, I'm going to repeat myself, in
16 the EA I think, you know, you spent a lot of time on it
17 obviously, but kind of glossed over a lot of things.

18 One was that our fire department isn't prepared, our
19 hospital is not prepared, and I think it mentioned hazmat
20 teams. I think the closest one is an hour and a half or
21 two hours away in St. George. So I.

90-02

22 just feel like everybody else, this is not a good
23 place to build this plant, because we've never had any
24 industry here. Our town ordinances aren't setup for
25 industry. They are only setup for residential matters.

Responses

Comment 89-02

Comment noted.

Comment 90-01

The subject of this comment has been addressed in the response to comment number 43-07.

Comment 90-02

Comment noted. The response to comment number 8-01 explains DOE's involvement in the proposed project.

Responses

Commenter 90 – Catherine Ives

59

1 So our town and its ordinances are not prepared either.
2 And as I said before, the plant isn't built yet, and
3 we don't know what kind of effects it's going to produce.
4 I have nothing against -- I want to say I have nothing
5 against this plant, nothing against this process. It's
6 interesting, it's experimental, but I don't think -- I
7 just don't think it fits into our community which is not
8 prepared for it. We just don't have the infrastructure
9 to have this plant here. That's just my opinion. Thank
10 you.
11 MR. ZAMBELLI: Anyone else that spoke before who
12 would like to provide additional comments?
13 I want to thank everyone this evening for
14 participating and providing comments. And please
15 remember you can continue to provide comments in addition
16 to those provided this evening and do so by
17 September 16th, 2011.
18 We will continue our informal session after this
19 formal session concludes. DOE and the project people
20 will answer your questions in a one on one conversation.
21 This concludes the formal session of the public hearing
22 for the Viresco Energy Draft Environmental Assessment.
23 Let the record show that this hearing adjourned at
24 8:35 p.m. Thank you very much.
25 (Hearing adjourned.)

90-02
(cont'd)

E-272

Responses

60

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Responses

1 STATE OF UTAH)
) SS.
 2 COUNTY OF WASHINGTON)

3

4 I, RORY JOHNSON, Certified Court Reporter, Registered
 Professional Reporter and Notary Public for the State of
 5 Utah, certify:

6 That the foregoing public hearing of the UTAH COAL
 AND BIOMASS FUELED PILOT PLANT EA, was taken before me at
 7 the time and place therein set forth;

8 That the proceedings of the meeting were recorded
 stenographically by me and were thereafter transcribed;

9 That the foregoing transcription is a true record of
 10 the proceedings recorded and transcribed by me to the best
 of my ability;

11 I further certify that I am not related to any party
 12 to said action nor in anywise interested in the outcome
 thereof.

13 IN WITNESS WHEREOF, I have subscribed my name and
 14 affixed my seal this 18th day of September, 2011.

15

16

17

18 _____
 RORY N. JOHNSON, RPR
 Notary Public in and for
 19 Washington County, State of Utah

20

21 My Commission Expires:
 May 20, 2014

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Commenter 91 – Tony Joe (The Navajo Nation)



BEN SHELLY
PRESIDENT

REX LEE JIM
VICE-PRESIDENT

October 4, 2011

Joseph Zambelli
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
M/S: B07, PO Box 880
Morgantown, WV 26507-0880

Dear Mr. Zambelli:

The Navajo Nation Historic Preservation Department – Traditional Culture Program (NNHPD-TCP) is in receipt of the proposed project regarding a Draft Environmental Assessment for the Utah Coal and Biomass Fueled Pilot Plant Project, Kanab, Utah.

After reviewing your consultation documents, NNHPD-TCP has concluded the proposed undertaking/project area **will not impact** Navajo traditional cultural resources. The NNHPD-TCP, on behalf of the Navajo Nation has no concerns at this time.

However, the determination made by the NNHPD-TCP does not necessarily mean that the Navajo Nation has no interest or concerns with the proposed project. If the proposed project inadvertently discovers habitation sites, plant gathering areas, human remains and objects of culture patrimony, the NNHPD-TCP request that we be notified respectively in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA).

The NNHPD-TCP appreciates the U.S. Department of Energy's consultation efforts, pursuant to 36 CFR Pt. 800.1 (c)(2)(iii). Should you have any additional concerns and/or questions, do not hesitate to contact me electronically at tony@navajohistoricpreservation.org or telephone at 928-871-7750.

Sincerely,

Tony H. Joe, Jr., Supervisory Anthropologist (Section 106 Consultations)
Historic Preservation Department – Traditional Culture Program

TCP 11-417
CC: Office File/Chrono

Responses

Comment 91-01

Comment noted.

91-01

E-275

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