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Evergy Missouri Metro – Exhibit 48
Jeffrey T. Kopp
Direct Testimony
File Nos. ER-2022-0129 & ER-2022-0130

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Issue:	Decommissioning Studies
Witness:	Jeffrey T. Kopp
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Case No.:	ER-2022-0129
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MISSOURI PUBLIC SERVICE COMMISSION

CASE NOS.: ER-2022-0129

DIRECT TESTIMONY

OF

JEFFREY T. KOPP

ON BEHALF OF

EVERGY MISSOURI METRO

Kansas City, Missouri
January 2022

DIRECT TESTIMONY

OF

JEFFREY T. KOPP

Case No. ER-2022-0129

Q: Please state your name and business address.

A: My name is Jeffrey ("Jeff") T. Kopp. My business address is 9400 Ward Parkway, Kansas City, Missouri 64114.

Q: By whom and in what capacity are you employed?

A: I am employed by 1898 & Co., a division of Burns & McDonnell Engineering Company, Inc. (hereinafter called "1898 & Co."), as the Managing Director of the Utility Consulting Department. 1898 & Co. is a business, technology and security solutions consulting firm serving multiple industries, including the electric power industry. As a part of Burns & McDonnell ("BMcD"), 1898 & Co. draws on over 120 years of experience. In 2020, BMcD was rated the number 1 firm in Power by the Engineering News Record ("ENR").

Q: Who are you testifying for?

A: I am testifying on behalf of Evergy Metro, Inc. d/b/a Evergy Missouri Metro ("Evergy Missouri Metro").

Q: What are your responsibilities?

A: I am a professional engineer with 20 years of experience providing consulting services to electric utilities. As the Managing Director of the Utility Consulting Department of BMcD, I oversee a team of more than 130 project managers, consultants, and engineers, who provide consulting services to clients primarily in the electric power generation and electric power transmission industries, as well as to other industrial and commercial clients. The services provided by this group include decommissioning cost studies, independent engineering assessments of power generation assets, economic evaluations of capital expenditures, new power generation development and evaluation, electric and water rate analysis, electric transmission and distribution planning, generation resource planning, renewable power development, and other related engineering and economic assessments.

In my role as a group manager, project manager, and project engineer, I have worked on and have overseen consulting activities for coal, natural gas, wind, solar, hydroelectric, and biomass power generation facilities. I have been involved in numerous decommissioning studies and served as project manager on the majority of them. I have helped prepare decommissioning studies on all types of power plants utilizing various technologies and fuels. These decommissioning studies have been utilized in rate cases, have been used to estimate the liability associated with site demolition and retirement at the end of the facilities' useful lives, to satisfy Financial Accounting Standard ("FAS") 143 (accounting for asset retirement), or utilized for actual asset demolition planning.

Q: Please describe your education, experience and employment history.

A: I have a bachelor's degree in Civil Engineering from the University of Missouri – Rolla (now the Missouri University of Science and Technology) and a Master of Business Administration from the University of Kansas. I am a registered Professional Engineer in the states of Missouri, Florida, Indiana, and Illinois. My resume is provided as Schedule JTK-1.

Q: Have you previously testified in a proceeding at the Missouri Public Service Commission ("MPSC" or "Commission") or before any other utility regulatory agency?

A: I have not testified in a proceeding at the Missouri Public Service Commission; however, I have provided testimony regarding power plant decommissioning costs as part of the development of depreciation rates to the following Commissions, the details of which are provided in my resume, Schedule JTK-1.

- Florida Public Service Commission
- Public Utilities Commission of the State of Colorado
- Kentucky Public Service Commission
- North Carolina Utilities Commission
- Oklahoma Corporation Commission
- Indiana Utility Regulatory Commission
- Regulatory Commission of Alaska
- Public Utility Commission of Texas
- New Mexico Public Regulation Commission.

Q: Have you prepared or co-authored any studies or reports on decommissioning costs?

A: Yes, throughout my career I have provided decommissioning cost estimating services for dozens of utilities throughout the United States in a majority of the states. I have been involved in the preparation of decommissioning cost estimate reports for over 300 plants. The units that I have prepared decommissioning cost estimates for have consisted of various technologies including coal-fired boilers, natural gas fired boilers, natural gas fired simple and combined cycle units, wind farms, hydroelectric power plants, and solar farms.

Q: What is the purpose of your testimony?

A: The purpose of my testimony is to describe and support Evergy Missouri Metro's Decommissioning Cost Estimate Study ("Study") prepared by me and my team for power generation assets serving Missouri. The study was completed, and a report was issued on September 30, 2021. This report sets forth the results of my decommissioning study which is provided as Schedule JTK-2.

Q: Were the Decommissioning Study attached to your testimony as Schedule JTK-2, and all Schedules prepared by you or under your direct supervision?

A: Yes.

Q: How does your testimony relate to other witnesses testifying in this proceeding?

A: I present the results of the Decommissioning Study, while witness John Spanos uses the results of my study to calculate net salvage rates on Evergy Missouri Metro's production plants for purposes of developing depreciation rates for

Evergy Missouri Metro's electric generating plants, which are then used to calculate Evergy Missouri Metro's requested depreciation expense.

Q: What recommendation are you making in your testimony?

A: I recommend that the Commission find that the results of the Decommissioning Study are reasonable and appropriate for use as the basis for the cost of removal estimates in the development of depreciation rates for Evergy Missouri Metro's electric generating plants.

Q. Please describe the Decommissioning Study prepared for Evergy Missouri Metro.

A. Evergy Missouri Metro retained 1898 and Co. to provide a recommendation regarding the total cost, in 2021 dollars, for decommissioning each generation unit and the common facilities at each of the generating plants at the end of the useful life of each facility, net of salvage value for scrap materials at each plant. Our estimates are inclusive of direct costs associated with decommissioning and demolishing the plant equipment and facilities and restoring the sites to an industrial condition. The direct costs include environmental remediation costs for asbestos removal and other hazardous material handling and disposal, as well as costs for closing any ponds and cleaning up potentially contaminated soil.

Q. What was the extent of your personal involvement in the preparation of the Decommissioning Study?

A. I served as the 1898 and Co. project director on the Decommissioning Study. I worked directly with all individuals and parties involved in the preparation of the decommissioning cost estimates in the Decommissioning Study. I was responsible for the overall project and was involved in the development of the dismantling and decommissioning assumptions and cost estimating methodology, preparation and review of the estimates, and preparation and review of the report. In addition, 1898 and Co. representatives and engineers visited each generation site (excluding Crossroad Energy Center, Greenwood Solar, and Lake Road Landfill Gas) to perform a tour of each facility with plant personnel to review the equipment, and I relied on information obtained during those tours in my analyses.

Q. What power generation assets did you evaluate in the Decommissioning Study?

A. We evaluated seventeen electric generating assets ("Plants") covering both the Evergy Metro and Evergy Missouri West jurisdictions, consisting of the fuel types listed in the following table:

Table 1: Power Generation Assets

Plant	Primary Fuel Type
Crossroad Energy Center	Natural Gas
Greenwood	Natural Gas
Greenwood Solar	Solar
Hawthorn	Coal/Natural Gas
Iatan	Coal
Jeffrey	Coal
Kansas City International	Natural Gas
LaCygne	Coal
Lake Road	Coal/Natural Gas
Lake Road – Landfill Gas	Landfill Gas
Nevada	Natural Gas
Northeast	Natural Gas
Osawatomie	Natural Gas
Ralph Green	Natural Gas
South Harper	Natural Gas
Spearville Wind	Wind
West Gardner	Natural Gas

Descriptions of the Plants covered by the Decommissioning Study are provided in Section 3.0 of Schedule JTK-2.

Q. At the time the Decommissioning Study was prepared, were all the Plants in service?

A. All units were in service at the time the Decommissioning Study was performed except for the following units which were out of service: Units 1 and 2 of the Kansas City International power generation facility, Units 1 through 4 of Hawthorn.

Q. Please summarize the results of your Decommissioning Study.

A. The total net cost associated with all units was estimated to be $310,496,100. The breakdown of this cost is presented and discussed in Schedule JTK-2 and summarized in the table below.

Table 2: Site-Specific Decommissioning Cost Summary (2021$)

Plant	Total Cost	Total Credits	Total Net Cost
Crossroad	$ 1,567,000	$ (1,427,000)	$ 140,000
Greenwood	$ 2,814,000	$ (1,682,000)	$ 1,132,000
Greenwood Solar	$ 519,000	$ (98,400)	$ 420,600
Hawthorn	$ 47,604,000	$ (15,521,000)	$ 32,083,000
Iatan	$ 82,464,000	$ (17,771,000)	$ 64,693,000
Jeffrey	$ 127,615,000	$ (24,961,000)	$ 102,654,000
KCI	$ 1,221,000	$ (285,000)	$ 936,000
LaCygne	$ 101,532,000	$ (17,077,000)	$ 84,455,000
Lake Road	$ 17,527,000	$ (5,180,000)	$ 12,347,000
Lake Road - LFG	$ 261,000	$ (161,000)	$ 100,000
Nevada	$ 436,000	$ (165,000)	$ 271,000
Northeast	$ 6,825,000	$ (2,982,000)	$ 3,843,000
Osawatomie	$ 768,000	$ (631,000)	$ 137,000
Ralph Green	$ 1,146,000	$ (500,000)	$ 646,000
South Harper	$ 2,411,000	$ (1,707,000)	$ 704,000
Spearville Wind	$ 12,797,500	$ (7,313,000)	$ 5,484,500
West Gardner	$ 2,751,000	$ (2,301,000)	$ 450,000
Fleet Total	**$ 410,258,500**	**$ (99,762,400)**	**$ 310,496,100**

Q. Explain the type of costs reflected in a decommissioning study.

A. Decommissioning study cost estimates generally include direct costs associated with decommissioning and demolishing the plant equipment and facilities and restoring the sites to a suitable condition, which in this case was to an industrial condition. The direct costs include environmental remediation costs for asbestos removal and other hazardous material handling and disposal, as well as costs for removing and disposing of contaminated soil. In addition to these direct costs, decommissioning studies also generally include estimates of indirect costs to be incurred by an entity during decommissioning and contingency costs, both of which I address in the next section of my testimony.

Q. What does restoring the site for industrial use require?

A. Each site will have all above grade buildings and equipment removed, foundations removed to two (2) feet below existing grade, be rough graded, and seeded. Underground piping will be capped and abandoned in place, except for circulating water piping which will be excavated to the top of the pipe and backfilled with on-site material. Ponds will have liners removed and be graded to match surrounding areas. Since the future use of each site is unknown, restoring each site to the standard of industrial use allows Evergy Missouri Metro flexibility regarding the potential future use. The sites can alternately remain in this condition in perpetuity. In the case of the specific sites analyzed in my study, each fossil unit site is restored to the standard of industrial use. This has been done according to Evergy Missouri Metro's experience with decommissioning several units in their fleet and likewise according to the standards we typically assume. It is reasonable to assume the sites would be restored to the standard of industrial use as this is a common practice, removes liabilities, and avoids future carrying costs associated with maintaining or ensuring the remaining facilities that could at some point exceed the cost of demolition, while maintaining flexibility of future site use. For example, restoring the site in this manner enables the site to be reused for another power plant, to be redeveloped for industrial use, or to be sold for similar uses.

Q. What approach was used to develop the direct cost estimates in the Decommissioning Study?

A. As mentioned prior, the decommissioning cost estimates were developed based on estimates of direct costs, indirect costs, and contingency. The direct decommissioning cost estimates were based on what I would expect an outside contractor, selected through a competitive bidding process, to charge Evergy Missouri Metro to demolish the site, dismantle all equipment, address environmental issues, and restore the site to a condition suitable for industrial use, based on performing known decommissioning and demolition tasks within the set of assumptions outlined in the Decommissioning Study and under ideal conditions. Site-specific direct cost estimates were developed using a "bottom-up" cost estimating approach, where cost estimates are developed from scratch through the development of site-specific quantity estimates and the application of unit pricing to the quantity estimates. The quantity estimates include but are not limited to items such as tons of steel; pounds of other metals such as copper and stainless steel; tons of debris; cubic yards of concrete; cubic yards of site grading; acres of seeding; and the labor hours required to complete the decommissioning and demolition activities.

Q. Where are the assumptions outlined in the Decommissioning Study?

A. The assumptions applied to the cost estimates are documented in Sections 4.1 and 4.2 of the Decommissioning Study.

Q. How were specific quantities and unit pricing estimated for purposes of estimating site-specific direct costs?

A. The 1898 and Co. team estimated quantities based on a visual inspection of the facilities, discussions with plant staff, review of engineering drawings, our in-house database of plant quantities, and our professional judgment. Using this information, we estimated costs for the tasks required to decommission and demolish each of the subject facilities. Current market pricing for labor rates, equipment, and unit pricing were then developed for each task. These rates were applied to the quantities for the Plants to determine the total direct cost of decommissioning each site. Additionally, unit pricing for scrap values were applied to the scrap quantities to determine anticipated salvage values, which are addressed later in my testimony.

Q. What sources did you rely on to develop the direct cost estimates for the Plants?

A. The labor rates, equipment costs, and disposal costs used to develop the Study cost estimates were specific to the locations in which the work is to be performed. These rates were applied to the quantities associated with each Plant to determine the total cost of decommissioning and demolishing. Disposal costs were obtained from publicly available information and communications with landfills located in the area in which the work is to be performed to result in estimates that are site-specific and account for local markets, costs and conditions.

Pricing developed by the American Metal Market ("AMM") was also used to develop scrap credits, as discussed in more detail in Section V of my testimony.

The AMM is an industry standard publication routinely relied upon by demolition contractors. Scrap costs also included a deduction for transportation from each site to the selected scrap market in order to result in estimates that are site-specific and account for local markets, costs and conditions.

Q. Did you rely on any other sources?

A. Yes. The RS Means online database was utilized to obtain labor rates, equipment costs, and disposal costs for the study area. RS Means labor rates are national averages and include site cost indices to provide localized costs to make the costs site specific. RS Means is widely utilized within the construction industry as a tool for estimating and projecting project costs.

Q. Are these sources generally accepted in the industry and relied upon by other regulatory authorities in setting decommissioning costs?

A. Yes. These sources are recognized industry-wide, and I have relied on them for the decommissioning cost estimates I have prepared for over 300 plants. Many of these cost estimates have been approved in numerous regulatory proceedings in which I have participated.

Q. What type of labor did you assume would perform the demolition tasks outlined in the cost estimates?

A. I utilized the B-8 Crew from RS Means, which is an appropriate crew for these types of activities.

Q. Did you consider whether the resale of any equipment would be feasible to offset your estimated decommissioning costs?

A. Yes. I do not believe resale is feasible due to the limited and opportunistic market for equipment resale. In our recent experience with power plant retirements, it has been difficult to find buyers of used equipment willing to pay more than the scrap value of the equipment because the market for specific buyers with a need for the specific equipment at the time of decommissioning is typically very limited. Furthermore, according to the U.S. Energy Information Administration, nearly 100 gigawatts of fossil-fueled capacity has been retired in the last decade and there are over 80 gigawatts ("GW") of additional announced retirements in the next 5 years, so it is anticipated the market would be flooded with used equipment and the potential buyers of that used equipment would be even further reduced, putting downward pressure on used equipment pricing. Therefore, it is reasonable to assume the expected value of the equipment should be its scrap value.

Q. Has your recent actual project experience been consistent with the approach of valuing equipment as scrap rather than resale?

A. Yes.

Q. Have you relied on this same methodology in preparing estimates of decommissioning costs in the past?

A. Yes. Over the years, we have worked closely with demolition contractors to develop decommissioning cost estimates more accurately for activities that the demolition contractors will perform. We have prepared numerous decommissioning studies for various clients considering different technologies in several different states and have provided services to clients on decommissioning project execution that has included review and evaluation of bids from demolition contractors. We have utilized this experience preparing decommissioning cost estimates as well as reviewing demolition contractor bids to confirm the reasonableness of the cost estimates we have prepared.

In addition, I am able to rely on my firm's long history, experience and familiarity with demolition practices to effectively and accurately estimate costs that are consistent with the industry and trends. For instance, we have reviewed competitive bids from demolition contractors for power plant demolition projects and worked with demolition contractors over the years to refine our estimating process to align our costs with theirs.

Q. Have you used this same model to estimate decommissioning costs for both fossil fuel and renewable production assets in the past?

A. Yes, I have used the same methodology and model to estimate decommissioning costs for various types of non-nuclear power generating assets. Technology-specific variations of the model have been developed and utilized over the last 10 years for asset types including coal fired boilers, natural gas fired boilers, natural gas fired combined cycles and simple cycles, peakers, reciprocating engines, hydroelectric power plants, wind farms, and solar farms. These models were utilized in the development of the cost estimates for each decommissioning and decommissioning study referenced in my resume, JTK-1.

Q. Does your Study dictate to the demolition contractor the actual decommissioning methods that will be used to dismantle these facilities in the future and therefore does your cost estimate rely on those means and methods?

A. No. At the time Evergy Missouri Metro decides to decommission the Plants, its decommissioning contractor will determine the means and methods by which the decommissioning will occur. It will be the contractor's responsibility to determine means and methods that result in safely decommissioning and demolishing the Plants at the lowest possible cost. However, based on our experience with decommissioning projects, discussions with demolition contractors, and discussions with other Evergy Missouri Metro utilities and other utilities throughout the United States, the cost estimates we prepared are reflective of what contractors would bid, through a competitive bidding process given the option to select safe and efficient means and methods.

Q. What is included in the project indirect costs?

A. Indirect costs include those costs expected to be incurred by Evergy Missouri Metro during the decommissioning process that are in addition to the direct costs paid to demolition contractors. This includes the internal administrative costs (e.g., permitting, fees, Evergy Missouri Metro employee allocated expense) or costs associated with third-party project managers or engineers providing oversight during demolition activities, inspections, and testing to confirm that remediation has been completed.

Q. How were the indirect costs determined?

A. Indirect costs were determined as a percentage of the direct costs, as is a typical approach when preparing these types of cost estimates. We developed the percentage of direct costs that was applied to determine the indirect costs based on input from Evergy Missouri Metro regarding their approach to managing the execution of the decommissioning projects.

Q. What is included in the contingency costs?

A. This category includes costs reasonably expected to be incurred by Evergy Missouri Metro during the execution of decommissioning and demolition activities, as discussed previously. For decommissioning projects, there is uncertainty associated with work conditions and how the work will be performed. There is also some uncertainty associated with estimating the quantities for decommissioning of facilities, due to the age and limits on drawings available, and the absence of testing results for environmental contamination prior to preparation of these types of studies. Contingency costs account for these unspecified but expected costs and are in addition to the direct costs associated with the base decommissioning costs for known scope items.

Q. Are contingency costs a necessary component of your cost estimates?

A. Yes. Contingency costs are a critical component for estimating the cost of almost any large construction project. They account for the potential circumstances that can result in an increase in costs over the direct costs for known scope items under ideal conditions. Some of these costs cannot be determined until the decommissioning process has begun. Therefore, contingency is applied on top of the base estimated cost to formulate a reasonable estimate to dismantle the generating facilities.

Q. Please explain.

A. It is important to note that many of these decommissioning and demolition projects will not commence until well into the future and site-specific conditions cannot always be identified until decommissioning has commenced. It is not uncommon for unexpected conditions to occur, including but not limited to items such as contractors discovering unaccounted for structures or facilities, like underground storage tanks, after demolition has begun that have to be dismantled, or a greater quantity of contaminated soil than was originally anticipated. Also, the estimated cost to dismantle assumes ideal weather and working conditions, which is an appropriate starting point for cost estimating but realistically cannot be achieved for the duration of a project and can result in cost increases. These types of circumstances can lead to significant increased costs that are difficult to specifically identify this far in advance of a project.

Q. Is including contingency costs in a decommissioning project standard industry practice?

A. Yes. The application of contingency is standard industry practice. Even on a project where firm pricing has been agreed to with a successful bidder, it is typical that a client will carry some level of contingency to cover potential change orders or other unforeseen circumstances associated with a project.

Q. Does a decommissioning project require a higher level of contingency than a greenfield construction project?

A. Yes. When compared to the contingency assigned to a new construction project, the contingency on a decommissioning project should be higher because older facilities with long operating histories often lack site plans or drawings, well-defined quantities of structural materials, environmental records, or foundation or subsurface information. To that end, the units analyzed in this Decommissioning Study will have been in-service for more than 20 years by the time they are decommissioned, and in some cases significantly longer.

Q. What contingency costs are you recommending in your Study?

A. I have recommended a contingency cost of 20 percent on top of the direct costs. The percentage was based on similar decommissioning cost contingencies I have prepared for decommissioning projects for other electric utilities that have been approved by regulatory agencies in other states.

Q. How were scrap values calculated?

A. Scrap metal prices used in the development of the scrap credit were based on a review of current pricing trends for various types of materials published by AMM, which reports the prices paid for scrap metals in transactions worldwide. The salvage value of equipment was included in the cost estimates based on scrap metal prices from the AMM report, less a deduction for transporting the scrap to market. This methodology is appropriate because demolition contractors routinely rely on the values published by AMM to develop the prices they are willing to credit a demolition project for scrap metals because this publication also provides information regarding the price the demolition contractors can expect to receive when they resell the scrap metals to a scrap metal broker or scrap metal processor.

Q. Is AMM a reputable source for calculating scrap pricing?

A. Yes. AMM is the leading independent supplier of market intelligence and pricing to the North American metals industries and publisher of the widely used reference prices for scrap. AMM has extensive experience in reporting scrap prices in a wide range of grades and locations. AMM has been reporting on the U.S. scrap market for more than 100 years, providing benchmark prices to users in the scrap metal industry. AMM develops index prices based on actual transactions, which are reported by market participants conducting scrap metal trades.

Q. What are your recommendations for the value of scrap metal applied in the Study?

A. Table 4-1 in the Study shows the scrap metal prices used. As noted above, the markets value for each type of scrap metal was adjusted to account for transportation costs, in order to determine the net value of the scrap material.

Q. How were transportation costs calculated for purposes of valuing the scrap metal?

A. Transportation costs include the costs necessary to haul the scrap metal to the scrap market location. Costs for transportation are based on current published railroad tariffs and the costs to truck the material from the site to the rail line.

Q. What are the total cost estimates for decommissioning and dismantling Evergy Missouri Metro's production plants resulting from the Decommissioning Study?

A. The resulting decommissioning cost estimates, including the credits for scrap materials, are summarized below and further detailed in Appendix A of the Study.

Table 3: Site-Specific Decommissioning Cost Summary (2021$)

Plant	Total Cost	Total Credits	Total Net Cost
Crossroad	$ 1,567,000	$ (1,427,000)	$ 140,000
Greenwood	$ 2,814,000	$ (1,682,000)	$ 1,132,000
Greenwood Solar	$ 519,000	$ (98,400)	$ 420,600
Hawthorn	$ 47,604,000	$ (15,521,000)	$ 32,083,000
Iatan	$ 82,464,000	$ (17,771,000)	$ 64,693,000
Jeffrey	$ 127,615,000	$ (24,961,000)	$ 102,654,000
KCI	$ 1,221,000	$ (285,000)	$ 936,000
LaCygne	$ 101,532,000	$ (17,077,000)	$ 84,455,000
Lake Road	$ 17,527,000	$ (5,180,000)	$ 12,347,000
Lake Road - LFG	$ 261,000	$ (161,000)	$ 100,000
Nevada	$ 436,000	$ (165,000)	$ 271,000
Northeast	$ 6,825,000	$ (2,982,000)	$ 3,843,000
Osawatomie	$ 768,000	$ (631,000)	$ 137,000
Ralph Green	$ 1,146,000	$ (500,000)	$ 646,000
South Harper	$ 2,411,000	$ (1,707,000)	$ 704,000
Spearville Wind	$ 12,797,500	$ (7,313,000)	$ 5,484,500
West Gardner	$ 2,751,000	$ (2,301,000)	$ 450,000
Fleet Total	**$ 410,258,500**	**$ (99,762,400)**	**$ 310,496,100**

Q. Are the decommissioning costs set forth in your testimony and Schedule JTK-2 reasonable and necessary estimates for purposes of calculating depreciation rates for Evergy Missouri Metro in this proceeding?

A. Yes. These costs are reasonably reflective of the actual costs necessary for Evergy Missouri Metro to decommission the Plants and are an appropriate basis for setting electric rates in this matter and for Evergy Missouri Metro to use for planning for decommissioning costs going forward.

Q: Does this conclude your testimony?

A: Yes, it does.

Decommissioning Cost Study

Evergy Metro, Inc. and Evergy Missouri West, Inc.

Evergy Decommissioning Cost Study
Project No. 133371

12/1/2021

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LIST OF ABBREVIATIONS

Abbreviation	**Term/Phrase/Name**
1898 & Co.	1898 & Co., part of Burns & McDonnell
BOP	Balance of Plant
CCR	Coal Combustion Residuals
C&D	Construction and Demolition
Evergy	Evergy Metro, Inc. and Evergy Missouri West, Inc.
HRSG	Heat Recovery Steam Generator
PCB	Polychlorinated Biphenyl
Plants	Power Generation Assets
SCI	Site Cost Index
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction
Study	Decommissioning Cost Study

1.0 EXECUTIVE SUMMARY

1.1 Introduction

Evergy Metro, Inc. and Evergy Missouri West, Inc. (collectively, "Evergy") retained 1898 & Co., a division of Burns & McDonnell Engineering Company, Inc. (hereinafter called "1898 & Co."), to conduct a Decommissioning Cost Study ("Study") for power generation assets ("Plants") in Kansas and Missouri. The assets include wind turbines, solar facilities, natural gas-fired, landfill gas-fired, and coal-fired generating facilities. The purpose of the Study was to review the facilities and to make a recommendation to Evergy regarding the total cost to decommission the facilities at the end of their useful lives. The decommissioning costs were developed by 1898 & Co. using information provided by Evergy and in-house data available to 1898 & Co.

1.2 Results

1898 & Co. has prepared cost estimates in 2021 dollars for the decommissioning of the Plants. These cost estimates are summarized in Table 1-1. When Evergy determines that the Plants should be retired, the above grade equipment and steel structures are assumed to have sufficient scrap value to a scrap contractor to offset a portion of the decommissioning costs. Evergy will incur costs in the demolition and restoration of the sites less the scrap value of equipment and bulk steel.

Table 1-1: Decommissioning Cost Summary (2021$)

Asset	Fuel Type	Decommissioning Costs	Salvage Credits	Net Project Cost
Crossroad	Natural Gas	$ 1,567,000	$ (1,427,000)	$ 140,000
Greenwood	Natural Gas	$ 2,814,000	$ (1,682,000)	$ 1,132,000
Greenwood Solar	Solar	$ 519,000	$ (98,400)	$ 420,600
Hawthorn	Coal / Natural Gas	$ 47,604,000	$ (15,521,000)	$ 32,083,000
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West Gardner	Natural Gas	$ 2,751,000	$ (2,301,000)	$ 450,000
TOTAL DECOMMISSIONING COST		$ 410,258,500	$ (99,762,400)	$ 310,496,100

The total project costs presented above include the costs to return the sites to an industrial condition suitable for reuse for development as an industrial facility. Included are the costs to dismantle all power generating equipment and balance of plant facilities and, where applicable, to perform environmental site restoration activities.

2.0 INTRODUCTION

2.1 Background

1898 & Co. was retained by Evergy to conduct a Study for Plants in Kansas and Missouri to estimate the decommissioning and dismantling costs. The assets include wind turbines, solar, natural gas-fired, landfill gas-fired, and coal-fired generating facilities. Individuals from 1898 & Co. visited the Plants evaluated within the Study in June of 2021. The purpose of the Study was to review the facilities and to make a recommendation to Evergy regarding the total cost to decommission and dismantle the facilities at the end of their useful lives. 1898 & Co. has prepared over three hundred decommissioning and dismantling studies on various types of fossil fuel and renewable power plants. In addition to preparing decommissioning and dismantling estimates, 1898 & Co. has supported demolition projects as the owner's engineer. In this capacity, 1898 & Co. has evaluated demolition bids and overseen demolition activities. This has provided 1898 & Co. with insight into a broad range of competitive demolition bids, which also assists in confirming the validity of the decommissioning and dismantling estimates developed by 1898 & Co.

2.2 Methodology

The site decommissioning and dismantling costs were developed using information provided by Evergy and in-house data 1898 & Co. has collected from previous project experience. 1898 & Co. estimated quantities for equipment based on a visual inspection of the facilities, reviews of engineering drawings, an in-house database of plant equipment quantities, and professional judgment. For each Plant, quantities were estimated for each required task. Current market pricing for labor rates and equipment was then developed for each task. The unit pricing was developed for each site based on the labor rates, equipment costs, and disposal costs specific to the area in which the work is to be performed. These rates were applied to the quantities for the Plants to determine the total cost of decommissioning and dismantling.

The decommissioning and dismantling costs include the cost to return the site to an industrial condition, suitable for reuse for development of an industrial facility. Included are the costs to decommission and dismantle all the assets owned by Evergy at the sites, including power generating equipment and Balance of Plant ("BOP") facilities.

2.2.1 Site Visits

Representatives from 1898 & Co. and Evergy visited the sites in June of 2021. A representative portion of the sites was visited. The site visits consisted of a tour of each facility along with Evergy representatives Rich Pearce and Quincy Mitchell as well as plant personnel at each of the sites.

The following Burns & McDonnell representatives comprised the site visit team:

- Mr. Jeff Kopp, Project Director
- Mr. Chad Swope, Project Engineer
- Ms. Brittany Hixon, Project Consultant

Table 2-1 outlines the dates in which the site visits were performed.

Table 2-1: Site Visit Dates

Plant	Site Visit Date
Spearville Wind	June 7th, 2021
Nevada	June 9th, 2021
Iatan	June 10th, 2021
Kansas City International	June 10th, 2021
Jeffrey	June 11th, 2021
Lake Road	June 14th, 2021
Hawthorn	June 16th, 2021
Northeast	June 16th, 2021
La Cygne	June 17th, 2021
Osawatomie	June 17th, 2021
West Gardner	June 17th, 2021
South Harper	June 18th, 2021
Ralph Green	June 18th, 2021
Greenwood	June 18th, 2021

3.0 PLANT DESCRIPTIONS

The following sections provide the plant descriptions considered for the purposes of this Study.

3.1 Crossroad

Crossroads Energy Center is located in Clarksdale, Mississippi in Coahoma County. Crossroad consists of four gas turbine units, each with a rating of 76.6 MW. The units run primarily on natural gas and do not have any secondary fuel options. A summary of the plant is shown in the following table.

Table 3-1: Crossroad Summary

Unit	Generation Type	Fuel Type	Capacity	In-Service Date
CT01	Gas Turbine	Natural Gas	76.6 MW	2002
CT02	Gas Turbine	Natural Gas	76.6 MW	2002
CT03	Gas Turbine	Natural Gas	76.6 MW	2002
CT04	Gas Turbine	Natural Gas	76.6 MW	2002

3.2 Greenwood

Greenwood is located near Greenwood, Missouri and consists of four GE 64.7 MW gas turbine units. All four units run primarily on natural gas but have the capability to run on distillate fuel oil as a secondary fuel source. The site also includes two 2.8 million gallon fuel oil tanks. A summary of the units is shown in the following table.

Table 3-2: Greenwood Summary

Unit	Generation Type	Fuel Type	Capacity	In-Service Date
1	Gas Turbine	Natural Gas	64.7 MW	1975
2	Gas Turbine	Natural Gas	64.7 MW	1975
3	Gas Turbine	Natural Gas	64.7 MW	1977
4	Gas Turbine	Natural Gas	64.7 MW	1979

3.3 Greenwood Solar

Greenwood Solar Generation Facility is solar farm located near Greenwood, Missouri. The layout includes approximately 12,000 Trina Solar solar panels. The plant has a total capacity of 3,000 kW-DC. A summary of the unit is shown in the following table.

Table 3-3: Greenwood Solar Summary

Unit	Generation Type	Fuel Type	Capacity	In-Service Date
5	Photovoltaic	Solar	3 MW	2016

3.4 Hawthorn

Hawthorn is located in Kansas City, Missouri. The plant consists of a 569 MW coal-fired boiler (Unit 5), a one-on-one combined cycle with a combined rating of 313 MW (Units 6 and 9), and two 82.2 MW gas turbines (Units 7 and 8). The combined cycle is comprised of a 170 MW gas turbine (Unit 6) and a 142.8 MW steam turbine (Unit 9). Unit 5 runs primarily on subbituminous coal but has the capability to run on natural gas as a secondary fuel source. The site also includes Units 1 through 4, which were taken out of service in the 1980s. Unit 4 steam turbine was repowered for Unit 9. The remaining units run on natural gas. A summary of the units is shown in the following table.

Table 3-4: Hawthorn Summary

Unit	Generation Type	Fuel Type	Capacity	In-Service Date
5	Steam Turbine	Subbituminous Coal	569 MW	1969
6	Gas Turbine	Natural Gas	170 MW	2000
7	Gas Turbine	Natural Gas	82.2 MW	2000
8	Gas Turbine	Natural Gas	82.2 MW	2000
9	Steam Turbine	Natural Gas	142.8 MW	2000

3.5 Iatan

Iatan is located approximately thirty miles south of St. Joseph, Missouri and consists of two steam turbine units. Both units run primarily on subbituminous coal but have the capability to run on distillate fuel oil as a secondary fuel source. Unit 1 is rated at 726 MW and Unit 2 is rated at 999 MW. Unit 1's environmental controls were added when Unit 2 was constructed, these controls include Selective Catalytic Reduction ("SCR"), fabric filters and scrubbers. A cooling tower provides cooling water for Unit 2. Both units have stainless steel condensers and feedwater heaters. A summary of the units is shown in the following table.

Table 3-5: Iatan Summary

Unit	Generation Type	Fuel Type	Capacity	In-Service Date
1	Steam Turbine	Subbituminous Coal	726 MW	1980
2	Steam Turbine	Subbituminous Coal	999 MW	2010

3.6 Jeffrey

Jeffrey Energy Center is located approximately thirty-eight miles northwest of Topeka, Kansas. Jeffrey consists of three 720 MW steam turbine units with a combined capacity of 2,160 MW. All three units run primarily on subbituminous coal but have the capability to run on distillate fuel oil as a secondary fuel source. Unit 1 has SCR and Units 2 and 3 have Selective Non-Catalytic Reduction ("SNCR"). A summary of the units is shown in the following table.

Table 3-6: Jeffrey Summary

Unit	Generation Type	Fuel Type	Capacity	In-Service Date
1	Steam Turbine	Subbituminous Coal	720 MW	1978
2	Steam Turbine	Subbituminous Coal	720 MW	1980
3	Steam Turbine	Subbituminous Coal	720 MW	1983

3.7 Kansas City International

Kansas City International power generation facility ("KCI") is located at the Kansas City International airport in Platte County, Missouri. KCI consist of two 18 MW gas turbine units. Both the units run primarily on natural gas but have the capability to run on jet fuel as a secondary fuel source. Both units are currently out of service. A summary of the units is shown in the following table.

Table 3-7: Kansas City International Summary

Unit	Generation Type	Fuel Type	Capacity	In-Service Date
1	Gas Turbine	Natural Gas	18 MW	1977
2	Gas Turbine	Natural Gas	18 MW	1977

3.8 LaCygne

LaCygne is located in LaCygne, Kansas and consists of two coal-fired boilers. Units 1 and 2 have approximate ratings of 873 MW and 726 MW, respectively. Both Units are equipped with SCR, scrubbers, and baghouses. A summary of the units is shown in the following table.

Table 3-8: LaCygne Summary

Unit	Generation Type	Fuel Type	Capacity	In-Service Date
1	Steam Turbine	Subbituminous Coal	873 MW	1973
2	Steam Turbine	Subbituminous Coal	725.9 MW	1977

3.9 Lake Road

Lake Road is located in St. Joseph, Missouri and consists of five natural gas-fired boilers (Boilers 1,2,3,4, and 6), one coal-fired boiler (Boiler 5), and three gas turbine units (Units 5-7). The steam turbine units 1-4 run primarily on natural gas but have the capability to run on distillate fuel oil as a secondary fuel source. Units 5 through 7 run primarily on natural gas but have the capability to run on distillate fuel oil as a secondary fuel source. A summary of the units is shown in the following table.

Table 3-9: Lake Road Summary

Unit	Generation Type	Fuel Type	Capacity	In-Service Date
1	Steam Turbine	Natural Gas	23 MW	1951
2	Steam Turbine	Natural Gas	25 MW	1957
3	Steam Turbine	Natural Gas	12.5 MW	1962
4	Steam Turbine	Natural Gas	90 MW	1967
5	Gas Turbine	Natural Gas	85 MW	1974
6	Gas Turbine	Distillate Fuel Oil	24 MW	1989
7	Gas Turbine	Distillate Fuel Oil	18.9 MW	1990

3.10 Lake Road Landfill Gas Facility

St. Joseph Landfill Gas facility is located approximately seven miles southeast of St. Joseph, Missouri and 6 miles from the Lake Road Plant. The unit has a rating of 1.6 MW and runs primarily on Landfill Gas. A summary of the unit is shown in the following table.

Table 3-10: St. Joseph Landfill Summary

Unit	Generation Type	Fuel Type	Capacity	In-Service Date
1	Internal Combustion	Landfill Gas	1.6 MW	2011

3.11 Nevada

Nevada is located in Nevada, Missouri and consists of one 22 MW gas turbine unit. The unit runs on distillate fuel oil. A summary of the unit is shown in the following table.

Table 3-11: Nevada Summary

Unit	Generation Type	Fuel Type	Capacity	In-Service Date
1	Gas Turbine	Distillate Fuel Oil	22 MW	1974

3.12 Northeast

Northeast is located in Kansas City, Missouri and consists of eight gas turbine units. Units 11 and 12 each have a rating of 50 MW and Units 13 through 18 each have a rating of 64.7 MW, with a combined rating of approximately 488 MW. All eight units run on distillate fuel oil. A summary of the units is shown in the following table.

Table 3-12: Northeast Summary

Unit	Generation Type	Fuel Type	Capacity	In-Service Date
11	Gas Turbine	Distillate Fuel Oil	50 MW	1972
12	Gas Turbine	Distillate Fuel Oil	50 MW	1972
13	Gas Turbine	Distillate Fuel Oil	64.7 MW	1976
14	Gas Turbine	Distillate Fuel Oil	64.7 MW	1976
15	Gas Turbine	Distillate Fuel Oil	64.7 MW	1975
16	Gas Turbine	Distillate Fuel Oil	64.7 MW	1975
17	Gas Turbine	Distillate Fuel Oil	64.7 MW	1977
18	Gas Turbine	Distillate Fuel Oil	64.7 MW	1977

3.13 Osawatomie

Osawatomie is located approximately five miles northeast of Osawatomie, Kansas and consists of one 102 MW gas turbine unit. The unit runs primarily on distillate fuel oil but has the capability to run on natural gas as a secondary fuel source. A summary of the unit is shown in the following table.

Table 3-13: Osawatomie Summary

Unit	Generation Type	Fuel Type	Capacity	In-Service Date
1	Gas Turbine	Natural Gas	102 MW	2003

3.14 Ralph Green

Ralph Green is located in Pleasant Hill, Missouri and consists of one gas turbine unit. The unit runs primarily on natural gas and has a rating of 85 MW. A summary of the unit is shown in the following table.

Table 3-14: Ralph Green Summary

Unit	Generation Type	Fuel Type	Capacity	In-Service Date
3	Gas Turbine	Natural Gas	85 MW	1981

3.15 South Harper

South Harper is located approximately twelve miles west of Harrisonville, Missouri. The plant consists of three 117 MW gas turbine units. A summary of the units is shown in the following table.

Table 3-15: South Harper Summary

Unit	Generation Type	Fuel Type	Capacity	In-Service Date
1	Gas Turbine	Natural Gas	117 MW	2005
2	Gas Turbine	Natural Gas	117 MW	2005
3	Gas Turbine	Natural Gas	117 MW	2005

3.16 Spearville Wind

Spearville Wind is located approximately eighteen miles northeast of Dodge City, Kansas. The wind farm includes 99 General Electric 1.5 SLE wind turbines, with a combined rating of 148.5 MW. A summary of the phases is shown in the following table.

Table 3-16: Spearville Wind Summary

Phase	Generation Type	Capacity	Number of Turbines	In-Service Date
1	Wind Turbine	100.5 MW	67	2006
2	Wind Turbine	48 MW	32	2010

3.17 West Gardner

West Gardner is located to the southwest of Gardner, Kansas. The Plant consists of four gas turbine units each with a rating of 102 MW. A summary of the units is shown in the following table.

Table 3-17: West Gardner Summary

Unit	Generation Type	Fuel Type	Capacity	In-Service Date
1	Gas Turbine	Natural Gas	102 MW	2003
2	Gas Turbine	Natural Gas	102 MW	2003
3	Gas Turbine	Natural Gas	102 MW	2003
4	Gas Turbine	Natural Gas	102 MW	2003

4.0 DECOMMISSIONING AND DISMANTLING COSTS

1898 & Co. has prepared dismantlement cost estimates for the Plants. When Evergy determines that each site should be retired, the above grade equipment and steel structures are assumed to have scrap value to a scrap contractor which will offset a portion of the site dismantlement costs. However, Evergy will incur costs of dismantling the Plants and restoration of the sites to the extent that those costs exceed the scrap value of equipment and bulk steel.

The dismantlement costs for each site include the cost to return each site to an industrial condition, suitable for reuse for development of an industrial facility. Included are the costs to dismantle all the assets at the sites, including power generating equipment and BOP facilities, as well as the costs to perform environmental site restoration activities.

For purposes of this study, 1898 & Co. assumed that each site will be dismantled as a single project, allowing the most cost-effective demolition methods to be utilized. A summary of several of the means and methods that could be employed is summarized in the following paragraphs; however, means and methods will not be dictated to the contractor by 1898 & Co. It will be the contractor's responsibility to determine means and methods that result in safely dismantling the Plants at the lowest possible cost.

Asbestos remediation, as required, would take place prior to commencement of any other demolition activities. Abatement would need to be performed in compliance with all state and federal regulations, including, but not limited to, requirements for sealing off work areas and maintaining negative pressure throughout the removal process. Final clearances and approvals would need to be achieved prior to performing further demolition activities.

High grade assets would then be removed from the site, to the extent possible. This would include items such as transformers, transformer coils, circuit breakers, electrical wire, condenser plates and tubes, and heater tubes. High grade assets include precious alloys such as copper, aluminum-brass tubes, stainless steel tubes, and other high value metals occurring in plant systems. High grade asset removal would occur up-front in the schedule, to reduce the potential for theft, to increase cash flow, and for separation of recyclable materials to increase scrap recovery. Methods of removal vary with the location and nature of the asset. Small transformers, small equipment, and wire would likely be removed and shipped as-is for processing at a scrap yard. Large transformers, combustion turbines, steam turbine generators, and condensers would likely require some on-site disassembly prior to being shipped to a scrap yard.

Construction and Demolition ("C&D") waste includes items such as non-asbestos insulation, roofing, wood, drywall, plastics, and other non-metallic materials. C&D waste would typically be segregated from scrap and concrete to avoid cross-contaminating of waste streams or recycle streams. C&D demolition crews could remove these materials with equipment such as excavators equipped with material handling attachments, skid steers, etc. This material would be consolidated and loaded into bulk containers for disposal.

In general, boilers and Heat Recovery Steam Generators ("HRSGs") could be felled and cut into manageable sized pieces on the ground. First the structures around the boilers would need to be removed using excavators equipped with shears and grapples. Stairs, grating, elevators, and other high structures would be removed using an "ultra-high reach" excavator, equipped with shears. Following removal of these structures, the boilers or HRSGs would be felled, using explosive blasts. The boilers would then be dismantled using equipment such as excavators equipped with shears and grapples, and the scrap metal loaded onto trailers for recycling.

After the surrounding structures and ductwork have been removed, the stacks would be imploded, using controlled blasts. Following implosion, the stack liners and concrete would be reduced in size to allow for handling and removal.

BOP structures and foundations would likely be demolished using excavators equipped with hydraulic shears, hydraulic grapples, and impact breakers, along with workers utilizing open flame cutting torches. Steel components would be separated, reduced in size, and loaded onto trailers for recycling. Concrete would be broken into manageable sized pieces and stockpiled for crushing on site. Concrete pieces would ultimately be loaded in a hopper and fed through a crusher to be sized for on-site disposal.

4.1 General Assumptions Applicable to All Sites

The following assumptions were made as the basis of all of the cost estimates:

1. Pricing for all estimates is in 2021 dollars.
2. All work will take place in the most cost-efficient method.
3. Labor costs are based on Union labor rates for a 40-hour workweek.
4. For purposes of this Study, it is assumed that all generating units at each power station will be dismantled as part of a single demolition project.
5. Units will be decommissioned to zero generating output. Existing utilities will remain in place for use by the contractor for the duration of the demolition activities.

6. No environmental costs have been included to address cleanup of contaminated soils, hazardous materials, or other conditions present on-site having a negative environmental impact, other than those specifically listed here. Soil testing and any other on-site testing has not been conducted as part of this Study. Any environmental clean-up or removal costs are based on assumed levels of contamination. No allowances are included for unforeseen environmental remediation activities.
7. Hazardous material abatement is included for all sites as necessary, including asbestos, mercury, and polychlorinated biphenyls ("PCBs"). Lead paint coated materials will be handled by certified personnel compliant with OSHA Standards as necessary but will not be removed prior to demolition.
8. Evergy will remove or consume all burnable coal, fuel oil and chemicals to the reasonable extent possible prior to commencement of demolition activities. Costs for these activities are not included in the estimate. Costs are included in the estimates for cleaning and flushing fuel oil tanks and lines. Costs have also been included to remove three (3) feet of soil directly below each of the fuel oil tanks and five (5) feet of soil beneath the fuel oil lines to account for the potential for this soil to be contaminated during normal operations.
9. Abatement of asbestos will precede any other work. After final air quality clearances have been reached, demolition can proceed.
10. All demolition and abatement activities, including removal of asbestos, will be done in accordance with all applicable Federal, State and Local laws, rules and regulations.
11. Asbestos quantities were provided by Evergy unless noted otherwise in the site-specific assumptions below.
12. Transmission switchyards and substations within the boundaries of the plant are not part of the demolition scope. Switchyards that are associated with the facilities only and are not part of the transmission system are included for demolition. For purposes of this study, the division between generation assets and transmission assets is at the high side of the generator step-up transformers.
13. The costs for relocation of transmission lines, or other transmission assets, are excluded from the decommissioning cost estimates.
14. Step-up transformers, auxiliary transformers, and spare transformers are included for demolition and scrap in all estimates.
15. All above-grade structures will be demolished. All below-grade structures, including foundations, will be removed to two (2) feet below existing grade, unless otherwise noted in the site-specific assumptions.
16. Foundations greater than two (2) feet below grade will be abandoned in place.

17. All intake structures will be removed to a depth of three (3) feet below the natural contour of the riverbed and bank.
18. Existing basements will be used to bury non-hazardous debris. Concrete in trenches and basements will be perforated to create drainage. Non-hazardous debris, such as concrete and brick, will be crushed and used as clean fill on-site once the capacity of all existing basements has been exceeded. All inert debris will be disposed of on-site. All other material that is not sold as scrap will be disposed of at an off-site landfill.
19. Except for the circulating water lines, underground piping will be capped and abandoned in place. Circulating water piping will be excavated to the top of pipe, the top of pipe will be broken, and backfilled with on-site material.
20. Site areas will be graded to achieve suitable site drainage to natural drainage patterns and seeded, but grading will be minimized to the extent possible.
21. Major equipment, structural steel, turbines, generators, transformers, electrical equipment, cabling, wiring, pumps, above ground piping, and equipment enclosures for the above equipment will be sold for scrap and removed from the Plant site by the demolition contractor. All other demolished materials are considered debris.
22. For purposes of this Study, it is assumed that none of the equipment will have a salvage value in excess of the scrap value of the materials in the equipment at the time of decommissioning. The decommissioning cost estimate is based on the end of useful life of the Plant. All equipment, steel, copper, and other metals will be sold as scrap. Credits for salvage value are based on scrap value alone. Resale of equipment and materials is not included.
23. Valuation and sale of land and all replacement generation costs are excluded from this scope.
24. The scope of the costs included in the Study is limited to the decommissioning activities that will occur at the end of useful life of the facilities. Additional on-going costs may be required, including, but not limited to groundwater monitoring associated with ash pond closure and/or other environmental monitoring activities. These costs are excluded from the cost estimates provided in this study.
25. Unless otherwise noted below, a 20 percent contingency is included on the direct costs in the estimates prepared as part of this Study to cover unknowns. The Owner's indirect costs are included as 5 percent of the direct costs.
26. Market conditions may result in cost variations at the time of contract execution.
27. The following scrap values were used in the decommissioning cost estimates. The scrap values are based upon the most recent 12 month average of American Metal

Market prices for June 2020 to May 2021 (i.e., one calendar year). These values include the cost to haul the scrap via truck and/or rail to the destination below.

Table 4-1: Scrap Pricing

Asset	Scrap Market	Steel Scrap Value ($/net ton)	Copper Scrap Value ($/pound)	Aluminum Scrap Value ($/pound)	Stainless Steel Scrap Value ($/net ton)
Crossroad	Cincinnati	$ (202.33)	$ (2.46)	$ (0.27)	($1,164.51)
Greenwood	Chicago	$ (223.78)	$ (2.47)	$ (0.28)	$ (1,187.91)
Greenwood Solar	Chicago	$ (223.78)	$ (2.47)	$ (0.28)	$ (1,187.91)
Hawthorn	Chicago	$ (231.93)	$ (2.47)	$ (0.29)	$ (1,196.06)
Iatan	Chicago	$ (224.34)	$ (2.47)	$ (0.28)	$ (1,188.47)
Jeffrey	Chicago	$ (225.35)	$ (2.47)	$ (0.28)	$ (1,189.48)
KCI	Chicago	$ (227.98)	$ (2.47)	$ (0.28)	$ (1,192.11)
LaCygne	Chicago	$ (224.13)	$ (2.47)	$ (0.28)	$ (1,188.26)
Lake Road	Chicago	$ (232.88)	$ (2.47)	$ (0.29)	$ (1,197.01)
Lake Road - LFG	Chicago	$ (232.88)	$ (2.47)	$ (0.29)	$ (1,197.01)
Nevada	Chicago	$ (208.03)	$ (2.46)	$ (0.27)	$ (1,172.16)
Northeast	Chicago	$ (233.44)	$ (2.47)	$ (0.29)	$ (1,197.57)
Osawatomie	Chicago	$ (232.46)	$ (2.47)	$ (0.29)	$ (1,196.59)
Ralph Green	Chicago	$ (221.68)	$ (2.47)	$ (0.28)	$ (1,185.81)
South Harper	Chicago	$ (223.18)	$ (2.47)	$ (0.28)	$ (1,187.31)
Spearville Wind	Chicago	$ (311.66)	$ (2.50)	$ (0.31)	-
West Gardner	Chicago	$ (225.32)	$ (2.47)	$ (0.28)	$ (1,189.45)

4.2 Site Specific Assumptions

The following assumptions were made specific to each site, in addition to the generic assumptions listed above.

4.2.1 Crossroad

1. There is assumed to be no asbestos on site.
2. Based on Clarksdale, Mississippi a Site Cost Index ("SCI") of 88.1 percent was applied.

4.2.2 Greenwood

1. There is assumed to be no asbestos on site.
2. Based on Harrisonville, Missouri an SCI of 89.5 percent was applied.

4.2.3 Greenwood Solar

1. All fencing and roads will be removed, and the Plant Site will be cleared of debris at the end of the decommissioning. Grading and seeding of the Plant Site is included in the decommissioning cost estimate.
2. Solar panel racking, transformers, electrical equipment, cabling, wiring, will be sold for scrap and removed from the Plant site by the demolition contractor. All other demolished materials are considered debris.
3. Based on Harrisonville, Missouri an SCI of 89.5 percent was applied.

4.2.4 Hawthorn

4. Costs included for removal of asbestos are based on information provided by Evergy.
5. Costs are included for removal of the coal pile runoff pond. It is estimated there is approximately 2 feet of residual material that will need removed.
6. Unit 5 condenser tubes are made of titanium material and Unit 9 condenser tubes are made of stainless steel. Units 1 through 3 condensers have not yet been removed and are assumed to be comprised of brass tubing.
7. The air quality control equipment for Units 1 through 4 was removed prior to the time of this Study.
8. Based on Kansas City, Missouri an SCI of 100 percent was applied.

4.2.5 Iatan

1. Approximately 10 percent of asbestos is assumed to remain in Unit 1. No asbestos is assumed to remain in Unit 2.
2. The condenser tubes are stainless steel.
3. Costs are included for removal of the coal pile runoff pond. It is estimated there is approximately 2 feet of residual material that will need removed.
4. Costs are included for removal of the landfill.
5. Based on St Joseph, Missouri an SCI of 89.4 percent was applied.

4.2.6 Jeffrey

1. Approximately 15 percent of asbestos is assumed to remain in each Unit.
2. The condenser tubes are stainless steel.
3. The prior Unit 5 cooling tower has been removed; however, the basin and associated piping remains. Costs are included for their removal.
4. The auxiliary make-up lake is assumed to remain following decommissioning and the settling area for Coal Combustion Residuals ("CCR") material will be closed in place in the next few years. As such, costs for removal are not included.

5. Costs are included for removal of the landfills.
6. Based on Topeka, Kansas an SCI of 98.7 percent was applied.

4.2.7 KCI

1. Approximately 10 percent of asbestos is assumed to remain.
2. The road extending to the north and the lot to the north of the maintenance building are assumed to be removed as part of decommissioning.
3. Based on Kansas City, Missouri an SCI of 100 percent was applied.

4.2.8 LaCygne

1. Approximately 25 percent of asbestos is assumed to remain.
2. The condensers for Units 1 and 2 have stainless steel piping.
3. Costs are included for removal of the gypsum runoff pond and both cells of the sewage lagoon.
4. Costs are included for removal of the landfills.
5. Based on Fort Scott, Kansas an SCI of 91.3 percent was applied.

4.2.9 Lake Road

1. Approximately 20 percent of asbestos is assumed to remain.
2. Costs are included for removal of the ponds as well as the coal pile.
3. Based on St. Joseph, Missouri an SCI of 89.4 percent was applied.

4.2.10 Lake Road – Landfill Gas Facility

1. There is assumed to be no asbestos on site.
2. Where documentation was not provided, weights and dimensions were assumed based on 1898 & Co.'s experience.
3. Based on St. Joseph, Missouri an SCI of 89.4 percent was applied.

4.2.11 Nevada

1. There is assumed to be no asbestos on site.
2. Based on Fort Scott, Kansas an SCI of 91.3 percent was applied.

4.2.12 Northeast

3. There is assumed to be no asbestos on site.
4. Based on Kansas City, Missouri an SCI of 100 percent was applied.

4.2.13 Osawatomie

5. There is assumed to be no asbestos on site.
6. Based on Harrisonville, Missouri an SCI of 89.5 percent was applied.

4.2.14 Ralph Green

7. There is assumed to be no asbestos on site.
8. Based on Harrisonville, Missouri an SCI of 89.5 percent was applied.

4.2.15 South Harper

9. There is assumed to be no asbestos on site.
10. Based on Harrisonville, Missouri an SCI of 89.5 percent was applied.

4.2.16 Spearville Wind

1. Plant access roads newly installed during construction of the Plant will be removed, including turbine access roads, substation access road, permanent meteorological tower access road. Additionally, parking areas, storage yards, crane pads, and all other areas constructed from asphalt, concrete, gravel, or compactable fill will be removed, recycled, and reclaimed.
2. Roads that existed prior to construction of the Plant will remain along with any improvements made to these existing roads to make them suitable for Plant use.
3. Crushed rock from roads, balance-of-plant areas, and turbine foundation areas is assumed to have value as a commodity for reuse. The cost to remove the crushed rock, load it into dump trucks, and haul it offsite is assumed to be at the expense of the Plant.
4. The nacelle, tower components, breakers, busbar, transformers, and buildings will be removed by the demolition contractor, and salvageable materials will be sold for scrap. All other demolished materials are considered debris.
5. Cables are assumed to be buried a minimum of four (4) feet below grade. At this depth, all cables (including both power and communication cabling) will remain in place after the Plant is decommissioned.
6. Based on Dodge City, Kansas an SCI of 95.9 percent was applied.

4.2.17 West Gardner

7. There is assumed to be no asbestos on site.
8. Based on Kansas City, Missouri an SCI of 100 percent was applied.

5.0 RESULTS

1898 & Co. has prepared cost estimates in 2021 dollars for the decommissioning of the Plants. These costs are summarized in the following table. When Evergy determines that the Plants should be retired, the above grade equipment and steel structures are assumed to have sufficient scrap value to a scrap contractor to offset a portion of the decommissioning costs. Evergy will incur costs in the demolition and restoration of the sites less the salvage value of equipment and bulk steel.

Table 5-1: Decommissioning Cost Summary (2021$)

Asset	Fuel Type	Decommissioning Costs	Salvage Credits	Net Project Cost
Crossroad	Natural Gas	$ 1,567,000	$ (1,427,000)	$ 140,000
Greenwood	Natural Gas	$ 2,814,000	$ (1,682,000)	$ 1,132,000
Greenwood Solar	Solar	$ 519,000	$ (98,400)	$ 420,600
Hawthorn	Coal / Natural Gas	$ 47,604,000	$ (15,521,000)	$ 32,083,000
Iatan	Coal	$ 82,464,000	$ (17,771,000)	$ 64,693,000
Jeffrey	Coal	$ 127,615,000	$ (24,961,000)	$ 102,654,000
KCI	Natural Gas	$ 1,221,000	$ (285,000)	$ 936,000
LaCygne	Coal	$ 101,532,000	$ (17,077,000)	$ 84,455,000
Lake Road	Coal / Natural Gas	$ 17,527,000	$ (5,180,000)	$ 12,347,000
Lake Road - LFG	Landfill Gas	$ 261,000	$ (161,000)	$ 100,000
Nevada	Natural Gas	$ 436,000	$ (165,000)	$ 271,000
Northeast	Natural Gas	$ 6,825,000	$ (2,982,000)	$ 3,843,000
Osawatomie	Natural Gas	$ 768,000	$ (631,000)	$ 137,000
Ralph Green	Natural Gas	$ 1,146,000	$ (500,000)	$ 646,000
South Harper	Natural Gas	$ 2,411,000	$ (1,707,000)	$ 704,000
Spearville Wind	Wind	$ 12,797,500	$ (7,313,000)	$ 5,484,500
West Gardner	Natural Gas	$ 2,751,000	$ (2,301,000)	$ 450,000
TOTAL DECOMMISSIONING COST		$ 410,258,500	$ (99,762,400)	$ 310,496,100

The total project costs presented above include the costs to return the sites to an industrial condition suitable for reuse for development as an industrial facility. Included are the costs to dismantle all power generating equipment and balance of plant facilities and, where applicable, to perform environmental site restoration activities. Further details including estimates for the major cost categories of each plant estimate are provided in Appendix A.

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APPENDIX A – COST ESTIMATE SUMMARIES

Table A-1
Crossroad
Decommissioning Cost Summary

		Labor		Material and Equipment		Disposal		Environmental		Total Cost		Scrap Value
Crossroad												
Unit 1-4												
CTGs and HRSGs	$	465,000	$	445,000	$	-	$	-	$	910,000	$	-
Stacks	$	12,000	$	11,000	$	-	$	-	$	23,000	$	-
GSU & Foundation	$	13,000	$	13,000	$	-	$	-	$	26,000	$	-
On-site Concrete Crushing & Disposal	$	-	$	-	$	4,000	$	-	$	4,000	$	-
Debris	$	-	$	-	$	57,000	$	-	$	57,000	$	-
Scrap	$	-	$	-	$	-	$	-	$	-	$	(1,397,000)
Subtotal	**$**	**490,000**	**$**	**469,000**	**$**	**61,000**	**$**	**-**	**$**	**1,020,000**	**$**	**(1,397,000)**
Common												
Switchgear & Electrical	$	6,000	$	6,000	$	-	$	5,000	$	17,000	$	-
Roads	$	2,000	$	2,000	$	-	$	-	$	4,000	$	-
All BOP Buildings	$	20,000	$	19,000	$	-	$	-	$	39,000	$	-
Fuel Equipment	$	14,000	$	14,000	$	-	$	-	$	28,000	$	-
Concrete Removal, Crushing, & Disposal	$	-	$	-	$	1,000	$	-	$	1,000	$	-
Grading & Seeding	$	-	$	-	$	-	$	142,000	$	142,000	$	-
Debris	$	-	$	-	$	2,000	$	-	$	2,000	$	-
Scrap	$	-	$	-	$	-	$	-	$	-	$	(30,000)
Subtotal	**$**	**42,000**	**$**	**41,000**	**$**	**3,000**	**$**	**147,000**	**$**	**233,000**	**$**	**(30,000)**
Crossroad Subtotal	**$**	**532,000**	**$**	**510,000**	**$**	**64,000**	**$**	**147,000**	**$**	**1,253,000**	**$**	**(1,427,000)**
TOTAL DECOM COST (CREDIT)									**$**	**1,253,000**	**$**	**(1,427,000)**
PROJECT INDIRECTS (5%)									**$**	**63,000**		
CONTINGENGY (20%)									**$**	**251,000**		
TOTAL PROJECT COST (CREDIT)									**$**	**1,567,000**	**$**	**(1,427,000)**
TOTAL NET PROJECT COST (CREDIT)									**$**	**140,000**		

Table A-2
Greenwood
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Greenwood						
Units 1-4						
CTGs and HRSGs	$ 574,000	$ 374,000	$ -	$ -	$ 948,000	$ -
Stacks	$ 15,000	$ 10,000	$ -	$ -	$ 25,000	$ -
Switchgear & Electrical	$ 6,000	$ 4,000	$ -	$ -	$ 10,000	$ -
GSU & Foundation	$ 57,000	$ 37,000	$ -	$ -	$ 94,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 5,000	$ -	$ 5,000	$ -
Debris	$ -	$ -	$ 50,000	$ -	$ 50,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (1,517,000)
Subtotal	**$ 652,000**	**$ 425,000**	**$ 55,000**	**$ -**	**$ 1,132,000**	**$ (1,517,000)**
Common						
BOP Misc.	$ 3,000	$ 2,000	$ -	$ -	$ 5,000	$ -
Roads	$ 7,000	$ 5,000	$ -	$ -	$ 12,000	$ -
All BOP Buildings	$ 32,000	$ 21,000	$ -	$ -	$ 53,000	$ -
Fuel Oil Tanks	$ 149,000	$ 97,000	$ -	$ 512,000	$ 758,000	$ -
Transformers & Foundation	$ -	$ -	$ -	$ 51,000	$ 51,000	$ -
Concrete Removal, Crushing, & Disposal	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 235,000	$ 235,000	$ -
Debris	$ -	$ -	$ 3,000	$ -	$ 3,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (165,000)
Subtotal	**$ 191,000**	**$ 125,000**	**$ 5,000**	**$ 798,000**	**$ 1,119,000**	**$ (165,000)**
Greenwood Subtotal	**$ 843,000**	**$ 550,000**	**$ 60,000**	**$ 798,000**	**$ 2,251,000**	**$ (1,682,000)**
TOTAL DECOM COST (CREDIT)					**$ 2,251,000**	**$ (1,682,000)**
PROJECT INDIRECTS (5%)					**$ 113,000**	
CONTINGENGY (20%)					**$ 450,000**	
TOTAL PROJECT COST (CREDIT)					**$ 2,814,000**	**$ (1,682,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 1,132,000**	

Table A-3
Greenwood Solar
Solar Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Greenwood Solar						
Solar Farm						
O&M Building	$ 500	$ 300	$ -	$ -	$ 800	$ -
Solar Panel Removal/Recycling	$ 68,900	$ 45,000	$ 23,600	$ -	$ 137,500	$ -
Panel Supports/Rack	$ 59,300	$ 38,700	$ -	$ -	$ 98,000	$ -
Electrical & Wiring	$ 5,100	$ 3,300	$ -	$ -	$ 8,400	$ -
Site Restoration	$ 15,300	$ 10,000	$ -	$ 144,600	$ 169,900	$ -
On-site Concrete Crushing and Removal	$ -	$ -	$ 200	$ -	$ 200	$ -
Debris	$ -	$ -	$ 400	$ -	$ 400	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (98,400)
Subtotal	**$ 149,100**	**$ 97,300**	**$ 24,200**	**$ 144,600**	**$ 415,200**	**$ (98,400)**
Greenwood Solar Subtotal	**$ 149,100**	**$ 97,300**	**$ 24,200**	**$ 144,600**	**$ 415,200**	**$ (98,400)**
TOTAL DECOM COST (CREDIT)					**$ 415,200**	**$ (98,400)**
PROJECT INDIRECTS (5%)					**$ 20,800**	
CONTINGENGY (20%)					**$ 83,000**	
TOTAL PROJECT COST (CREDIT)					**$ 519,000**	**$ (98,400)**
TOTAL NET PROJECT COST (CREDIT)					**$ 420,600**	

Table A-4
Hawthorn
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Hawthorn						
Unit 1						
Boiler	$ 738,000	$ 482,000	$ -	$ -	$ 1,220,000	$ -
Steam Turbine & Building	$ 453,000	$ 296,000	$ -	$ -	$ 749,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 25,000	$ -	$ 25,000	$ -
Debris	$ -	$ -	$ 18,000	$ -	$ 18,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (978,000)
Subtotal	**$ 1,191,000**	**$ 778,000**	**$ 43,000**	**$ -**	**$ 2,012,000**	**$ (978,000)**
Unit 2						
Boiler	$ 738,000	$ 482,000	$ -	$ -	$ 1,220,000	$ -
Steam Turbine & Building	$ 453,000	$ 296,000	$ -	$ -	$ 749,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 25,000	$ -	$ 25,000	$ -
Debris	$ -	$ -	$ 18,000	$ -	$ 18,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (978,000)
Subtotal	**$ 1,191,000**	**$ 778,000**	**$ 43,000**	**$ -**	**$ 2,012,000**	**$ (978,000)**
Unit 3						
Boiler	$ 738,000	$ 482,000	$ -	$ -	$ 1,220,000	$ -
Steam Turbine & Building	$ 453,000	$ 296,000	$ -	$ -	$ 749,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 25,000	$ -	$ 25,000	$ -
Debris	$ -	$ -	$ 18,000	$ -	$ 18,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (978,000)
Subtotal	**$ 1,191,000**	**$ 778,000**	**$ 43,000**	**$ -**	**$ 2,012,000**	**$ (978,000)**
Unit 4						
Boiler	$ 738,000	$ 482,000	$ -	$ -	$ 1,220,000	$ -
Steam Turbine & Building	$ 42,000	$ 27,000	$ -	$ -	$ 69,000	$ -
Debris	$ -	$ -	$ 18,000	$ -	$ 18,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (724,000)
Subtotal	**$ 780,000**	**$ 509,000**	**$ 21,000**	**$ -**	**$ 1,310,000**	**$ (724,000)**
Unit 5						
Boiler	$ 2,223,000	$ 1,451,000	$ -	$ -	$ 3,674,000	$ -
Steam Turbine & Building	$ 1,299,000	$ 848,000	$ -	$ -	$ 2,147,000	$ -
Precipitator	$ -	$ -	$ -	$ -	$ -	$ -
SCR	$ 537,000	$ 350,000	$ -	$ -	$ 887,000	$ -
Scrubber / FGD	$ 571,000	$ 373,000	$ -	$ -	$ 944,000	$ -
Baghouse	$ 959,000	$ 626,000	$ -	$ -	$ 1,585,000	$ -
Stacks	$ 224,000	$ 146,000	$ -	$ -	$ 370,000	$ -
GSU & Foundation	$ 99,000	$ 64,000	$ -	$ -	$ 163,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 149,000	$ -	$ 149,000	$ -
Debris	$ -	$ -	$ 35,000	$ -	$ 35,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (7,196,000)
Subtotal	**$ 5,912,000**	**$ 3,858,000**	**$ 184,000**	**$ -**	**$ 9,954,000**	**$ (7,196,000)**
Units 6 and 9						
CTGs and HRSGs	$ 1,107,000	$ 722,000	$ -	$ -	$ 1,829,000	$ -
Steam Turbine & Building	$ 481,000	$ 314,000	$ -	$ -	$ 795,000	$ -
Cooling Towers & Basin	$ 106,000	$ 69,000	$ -	$ -	$ 175,000	$ -
Stacks	$ 2,000	$ 1,000	$ -	$ -	$ 3,000	$ -
GSU & Foundation	$ 31,000	$ 20,000	$ -	$ -	$ 51,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 28,000	$ -	$ 28,000	$ -
Debris	$ -	$ -	$ 25,000	$ -	$ 25,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (2,101,000)
Subtotal	**$ 1,727,000**	**$ 1,126,000**	**$ 53,000**	**$ -**	**$ 2,906,000**	**$ (2,101,000)**
Units 7 and 8						
CTGs and HRSGs	$ 402,000	$ 263,000	$ -	$ -	$ 665,000	$ -
Stacks	$ 8,000	$ 6,000	$ -	$ -	$ 14,000	$ -
GSU & Foundation	$ 25,000	$ 16,000	$ -	$ -	$ 41,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 5,000	$ -	$ 5,000	$ -
Debris	$ -	$ -	$ 24,000	$ -	$ 24,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (814,000)
Subtotal	**$ 435,000**	**$ 285,000**	**$ 29,000**	**$ -**	**$ 749,000**	**$ (814,000)**
Handling						
Coal Handling Facilites	$ 326,000	$ 213,000	$ -	$ -	$ 539,000	$ -
Coal Storage Area Restoration	$ -	$ -	$ -	$ 5,970,000	$ 5,970,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 4,000	$ -	$ 4,000	$ -
Debris	$ -	$ -	$ 55,000	$ -	$ 55,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (213,000)
Subtotal	**$ 326,000**	**$ 213,000**	**$ 59,000**	**$ 5,970,000**	**$ 6,568,000**	**$ (213,000)**

Common						
Cooling Water Intakes and Circulating Water Pumps	$ 144,000	$ 94,000	$ -	$ 531,000	$ 769,000	$ -
BOP Misc.	$ 398,000	$ 260,000	$ -	$ -	$ 658,000	$ -
Roads	$ 97,000	$ 63,000	$ -	$ -	$ 160,000	$ -
All BOP Buildings	$ 509,000	$ 332,000	$ -	$ -	$ 841,000	$ -
Fuel Equipment	$ 81,000	$ 53,000	$ -	$ -	$ 134,000	$ -
All Other Tanks	$ 174,000	$ 113,000	$ -	$ -	$ 287,000	$ -
Transformers & Foundation	$ 73,000	$ 47,000	$ -	$ 149,000	$ 269,000	$ -
Asbestos Removal	$ -	$ -	$ -	$ 3,639,000	$ 3,639,000	$ -
Mercury & Universal Waste Disposal	$ -	$ -	$ -	$ 56,000	$ 56,000	$ -
Pond Closure	$ -	$ -	$ -	$ 3,440,000	$ 3,440,000	$ -
Cooling Towers and Basin	$ -	$ -	$ -	$ -	$ -	$ -
Plant Washdown & Materials Disposal	$ -	$ -	$ -	$ 67,000	$ 67,000	$ -
Concrete Removal, Crushing, & Disposal	$ -	$ -	$ 55,000	$ -	$ 55,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 174,000	$ 174,000	$ -
Debris	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (561,000)
Subtotal	**$ 1,476,000**	**$ 962,000**	**$ 66,000**	**$ 8,056,000**	**$ 10,560,000**	**$ (561,000)**
Hawthorn Subtotal	**$ 14,229,000**	**$ 9,287,000**	**$ 541,000**	**$ 14,026,000**	**$ 38,083,000**	**$ (15,521,000)**
TOTAL DECOM COST (CREDIT)					**$ 38,083,000**	**$ (15,521,000)**
PROJECT INDIRECTS (5%)					**$ 1,904,000**	
CONTINGENGY (20%)					**$ 7,617,000**	
TOTAL PROJECT COST (CREDIT)					**$ 47,604,000**	**$ (15,521,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 32,083,000**	

Table A-5
Iatan
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Iatan						
Unit 1						
Asbestos Removal	$ -	$ -	$ -	$ 1,042,000	$ 1,042,000	$ -
Boiler	$ 3,094,000	$ 2,019,000	$ -	$ -	$ 5,113,000	$ -
Steam Turbine & Building	$ 1,700,000	$ 1,110,000	$ -	$ -	$ 2,810,000	$ -
SCR	$ 569,000	$ 371,000	$ -	$ -	$ 940,000	$ -
Scrubber / FGD	$ 637,000	$ 416,000	$ -	$ -	$ 1,053,000	$ -
Baghouse	$ 912,000	$ 595,000	$ -	$ -	$ 1,507,000	$ -
Stacks	$ 229,000	$ 149,000	$ -	$ -	$ 378,000	$ -
Cooling Water Intakes and Circulating Water Pumps	$ 25,000	$ 16,000	$ -	$ 66,000	$ 107,000	$ -
GSU & Foundation	$ 111,000	$ 72,000	$ -	$ -	$ 183,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 210,000	$ -	$ 210,000	$ -
Debris	$ -	$ -	$ 51,000	$ -	$ 51,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (7,260,000)
Subtotal	**$ 7,277,000**	**$ 4,748,000**	**$ 261,000**	**$ 1,108,000**	**$ 13,394,000**	**$ (7,260,000)**
Unit 2						
Boiler	$ 3,869,000	$ 2,525,000	$ -	$ -	$ 6,394,000	$ -
Steam Turbine & Building	$ 2,916,000	$ 1,903,000	$ -	$ -	$ 4,819,000	$ -
SCR	$ 786,000	$ 513,000	$ -	$ -	$ 1,299,000	$ -
Scrubber / FGD	$ 724,000	$ 473,000	$ -	$ -	$ 1,197,000	$ -
Baghouse	$ 1,117,000	$ 729,000	$ -	$ -	$ 1,846,000	$ -
Cooling Towers & Basin	$ 1,374,000	$ 897,000	$ -	$ -	$ 2,271,000	$ -
Stacks	$ 236,000	$ 154,000	$ -	$ -	$ 390,000	$ -
Cooling Water Intakes and Circulating Water Pumps	$ 29,000	$ 19,000	$ -	$ 77,000	$ 125,000	$ -
GSU & Foundation	$ 204,000	$ 133,000	$ -	$ -	$ 337,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 373,000	$ -	$ 373,000	$ -
Debris	$ -	$ -	$ 68,000	$ -	$ 68,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (9,472,000)
Subtotal	**$ 11,255,000**	**$ 7,346,000**	**$ 441,000**	**$ 77,000**	**$ 19,119,000**	**$ (9,472,000)**
Handling						
Coal Handling Facilites	$ 503,000	$ 328,000	$ -	$ -	$ 831,000	$ -
Coal Storage Area Restoration	$ -	$ -	$ -	$ 11,136,000	$ 11,136,000	$ -
Limestone Handling Facilities	$ 180,000	$ 117,000	$ -	$ -	$ 297,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 5,000	$ -	$ 5,000	$ -
Debris	$ -	$ -	$ 128,000	$ -	$ 128,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (515,000)
Subtotal	**$ 683,000**	**$ 445,000**	**$ 133,000**	**$ 11,136,000**	**$ 12,397,000**	**$ (515,000)**
Common						
Cooling Water Intakes and Circulating Water Pumps	$ 130,000	$ 85,000	$ -	$ -	$ 215,000	$ -
BOP Misc.	$ 132,000	$ 86,000	$ -	$ -	$ 218,000	$ -
Roads	$ 459,000	$ 299,000	$ -	$ -	$ 758,000	$ -
All BOP Buildings	$ 572,000	$ 373,000	$ -	$ -	$ 945,000	$ -
Fuel Equipment	$ 36,000	$ 23,000	$ -	$ -	$ 59,000	$ -
All Other Tanks	$ 374,000	$ 244,000	$ -	$ -	$ 618,000	$ -
Closure of Coal Runoff Pond	$ -	$ -	$ -	$ 6,857,000	$ 6,857,000	$ -
Landfill Closure	$ -	$ -	$ -	$ 7,701,000	$ 7,701,000	$ -
Plant Washdown & Materials Disposal	$ -	$ -	$ -	$ 59,000	$ 59,000	$ -
Concrete Removal, Crushing, & Disposal	$ -	$ -	$ 50,000	$ -	$ 50,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 3,563,000	$ 3,563,000	$ -
Debris	$ -	$ -	$ 18,000	$ -	$ 18,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (524,000)
Subtotal	**$ 1,703,000**	**$ 1,110,000**	**$ 68,000**	**$ 18,180,000**	**$ 21,061,000**	**$ (524,000)**
Iatan Subtotal	**$ 20,918,000**	**$ 13,649,000**	**$ 903,000**	**$ 30,501,000**	**$ 65,971,000**	**$ (17,771,000)**
TOTAL DECOM COST (CREDIT)					**$ 65,971,000**	**$ (17,771,000)**
PROJECT INDIRECTS (5%)					**$ 3,299,000**	
CONTINGENGY (20%)					**$ 13,194,000**	
TOTAL PROJECT COST (CREDIT)					**$ 82,464,000**	**$ (17,771,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 64,693,000**	

Table A-6
Jeffrey
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Jeffrey						
Unit 1						
Asbestos Removal	$ -	$ -	$ -	$ 1,550,000	$ 1,550,000	$ -
Boiler	$ 2,575,000	$ 2,467,000	$ -	$ -	$ 5,042,000	$ -
Steam Turbine & Building	$ 1,708,000	$ 1,636,000	$ -	$ -	$ 3,344,000	$ -
Precipitators	$ 802,000	$ 768,000	$ -	$ -	$ 1,570,000	$ -
SCR	$ 616,000	$ 590,000	$ -	$ -	$ 1,206,000	$ -
Scrubber / FGD	$ 561,000	$ 537,000	$ -	$ -	$ 1,098,000	$ -
Cooling Towers & Basin	$ 77,000	$ 74,000	$ -	$ -	$ 151,000	$ -
Stacks	$ 144,000	$ 138,000	$ -	$ -	$ 282,000	$ -
GSU & Foundation	$ 125,000	$ 119,000	$ -	$ -	$ 244,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 215,000	$ -	$ 215,000	$ -
Debris	$ -	$ -	$ 83,000	$ -	$ 83,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (7,464,000)
Subtotal	**$ 6,608,000**	**$ 6,329,000**	**$ 298,000**	**$ 1,550,000**	**$ 14,785,000**	**$ (7,464,000)**
Unit 2						
Asbestos Removal	$ -	$ -	$ -	$ 1,550,000	$ 1,550,000	$ -
Boiler	$ 2,575,000	$ 2,467,000	$ -	$ -	$ 5,042,000	$ -
Steam Turbine & Building	$ 1,708,000	$ 1,636,000	$ -	$ -	$ 3,344,000	$ -
Precipitator	$ 802,000	$ 768,000	$ -	$ -	$ 1,570,000	$ -
SCR	$ 281,000	$ 269,000	$ -	$ -	$ 550,000	$ -
Scrubber / FGD	$ 561,000	$ 537,000	$ -	$ -	$ 1,098,000	$ -
Cooling Towers & Basin	$ 77,000	$ 74,000	$ -	$ -	$ 151,000	$ -
Stacks	$ 144,000	$ 138,000	$ -	$ -	$ 282,000	$ -
GSU & Foundation	$ 125,000	$ 119,000	$ -	$ -	$ 244,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 215,000	$ -	$ 215,000	$ -
Debris	$ -	$ -	$ 83,000	$ -	$ 83,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (7,034,000)
Subtotal	**$ 6,273,000**	**$ 6,008,000**	**$ 298,000**	**$ 1,550,000**	**$ 14,129,000**	**$ (7,034,000)**
Unit 3						
Asbestos Removal	$ -	$ -	$ -	$ 1,550,000	$ 1,550,000	$ -
Boiler	$ 2,575,000	$ 2,467,000	$ -	$ -	$ 5,042,000	$ -
Steam Turbine & Building	$ 1,708,000	$ 1,636,000	$ -	$ -	$ 3,344,000	$ -
Precipitator	$ 802,000	$ 768,000	$ -	$ -	$ 1,570,000	$ -
SCR	$ 281,000	$ 269,000	$ -	$ -	$ 550,000	$ -
Scrubber / FGD	$ 561,000	$ 537,000	$ -	$ -	$ 1,098,000	$ -
Cooling Towers & Basin	$ 77,000	$ 74,000	$ -	$ -	$ 151,000	$ -
Stacks	$ 144,000	$ 138,000	$ -	$ -	$ 282,000	$ -
GSU & Foundation	$ 125,000	$ 119,000	$ -	$ -	$ 244,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 215,000	$ -	$ 215,000	$ -
Debris	$ -	$ -	$ 83,000	$ -	$ 83,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (7,034,000)
Subtotal	**$ 6,273,000**	**$ 6,008,000**	**$ 298,000**	**$ 1,550,000**	**$ 14,129,000**	**$ (7,034,000)**
Handling						
Coal Handling Facilites	$ 1,831,000	$ 1,754,000	$ -	$ -	$ 3,585,000	$ -
Coal Storage Area Restoration	$ -	$ -	$ -	$ 17,788,000	$ 17,788,000	$ -
Limestone Handling Facilities	$ 203,000	$ 195,000	$ -	$ -	$ 398,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
Debris	$ -	$ -	$ 253,000	$ -	$ 253,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (1,975,000)
Subtotal	**$ 2,034,000**	**$ 1,949,000**	**$ 275,000**	**$ 17,788,000**	**$ 22,046,000**	**$ (1,975,000)**
Common						
Cooling Water Intakes and Circulating Water Pumps	$ 81,000	$ 77,000	$ -	$ 590,000	$ 748,000	$ -
BOP Misc.	$ 180,000	$ 173,000	$ -	$ -	$ 353,000	$ -
Roads	$ 300,000	$ 288,000	$ -	$ -	$ 588,000	$ -
All BOP Buildings	$ 780,000	$ 747,000	$ -	$ -	$ 1,527,000	$ -
Fuel Equipment	$ 305,000	$ 292,000	$ -	$ 824,000	$ 1,421,000	$ -
All Other Tanks	$ 1,137,000	$ 1,089,000	$ -	$ -	$ 2,226,000	$ -
Transformers & Foundation	$ 46,000	$ 44,000	$ -	$ 310,000	$ 400,000	$ -
Mercury & Universal Waste Disposal	$ -	$ -	$ -	$ 152,000	$ 152,000	$ -
Landfill Closure	$ -	$ -	$ -	$ 22,216,000	$ 22,216,000	$ -
Plant Washdown & Materials Disposal	$ -	$ -	$ -	$ 61,000	$ 61,000	$ -
Concrete Removal, Crushing, & Disposal	$ -	$ -	$ 130,000	$ -	$ 130,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 7,172,000	$ 7,172,000	$ -
Debris	$ -	$ -	$ 9,000	$ -	$ 9,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (1,454,000)
Subtotal	**$ 2,829,000**	**$ 2,710,000**	**$ 139,000**	**$ 31,325,000**	**$ 37,003,000**	**$ (1,454,000)**
Jeffrey Subtotal	**$ 24,017,000**	**$ 23,004,000**	**$ 1,308,000**	**$ 53,763,000**	**$ 102,092,000**	**$ (24,961,000)**
TOTAL DECOM COST (CREDIT)					**$ 102,092,000**	**$ (24,961,000)**
PROJECT INDIRECTS (5%)					**$ 5,105,000**	
CONTINGENGY (20%)					**$ 20,418,000**	
TOTAL PROJECT COST (CREDIT)					**$ 127,615,000**	**$ (24,961,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 102,654,000**	

Table A-7
Kansas City International
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Kansas City International						
Unit 1 and 2						
Asbestos Removal	$ -	$ -	$ -	$ 52,000	$ 52,000	$ -
CTGs and HRSGs	$ 133,000	$ 87,000	$ -	$ -	$ 220,000	$ -
Stacks	$ 8,000	$ 6,000	$ -	$ -	$ 14,000	$ -
GSU & Foundation	$ 20,000	$ 13,000	$ -	$ -	$ 33,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 3,000	$ -	$ 3,000	$ -
Debris	$ -	$ -	$ 5,000	$ -	$ 5,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (217,000)
Subtotal	**$ 167,000**	**$ 110,000**	**$ 8,000**	**$ 52,000**	**$ 337,000**	**$ (217,000)**
Common						
Roads	$ 92,000	$ 60,000	$ -	$ -	$ 152,000	$ -
All BOP Buildings	$ 94,000	$ 61,000	$ -	$ -	$ 155,000	$ -
Fuel Equipment	$ 47,000	$ 31,000	$ -	$ 36,000	$ 114,000	$ -
All Other Tanks	$ 7,000	$ 5,000	$ -	$ -	$ 12,000	$ -
Switchgear & Electrical	$ 7,000	$ 4,000	$ -	$ 7,000	$ 18,000	$ -
Concrete Removal, Crushing, & Disposal	$ -	$ -	$ 5,000	$ -	$ 5,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 183,000	$ 183,000	$ -
Debris	$ -	$ -	$ 1,000	$ -	$ 1,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (68,000)
Subtotal	**$ 247,000**	**$ 161,000**	**$ 6,000**	**$ 226,000**	**$ 640,000**	**$ (68,000)**
Kansas City International Subtotal	**$ 414,000**	**$ 271,000**	**$ 14,000**	**$ 278,000**	**$ 977,000**	**$ (285,000)**
TOTAL DECOM COST (CREDIT)					**$ 977,000**	**$ (285,000)**
PROJECT INDIRECTS (5%)					**$ 49,000**	
CONTINGENGY (20%)					**$ 195,000**	
TOTAL PROJECT COST (CREDIT)					**$ 1,221,000**	**$ (285,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 936,000**	

Table A-8
LaCygne
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
LaCygne						
Unit 1						
Asbestos Removal	$ -	$ -	$ -	$ 3,133,000	$ 3,133,000	$ -
Boiler	$ 2,613,000	$ 2,503,000	$ -	$ -	$ 5,116,000	$ -
Steam Turbine & Building	$ 1,250,000	$ 1,197,000	$ -	$ -	$ 2,447,000	$ -
SCR	$ 477,000	$ 457,000	$ -	$ -	$ 934,000	$ -
Scrubber / FGD	$ 608,000	$ 582,000	$ -	$ -	$ 1,190,000	$ -
Baghouse	$ 759,000	$ 727,000	$ -	$ -	$ 1,486,000	$ -
Stacks	$ 147,000	$ 141,000	$ -	$ -	$ 288,000	$ -
Cooling Water Intakes and Circulating Water Pumps	$ 18,000	$ 17,000	$ -	$ -	$ 35,000	$ -
GSU & Foundation	$ 76,000	$ 73,000	$ -	$ -	$ 149,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 198,000	$ -	$ 198,000	$ -
Debris	$ -	$ -	$ 35,000	$ -	$ 35,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (7,687,000)
Subtotal	**$ 5,948,000**	**$ 5,697,000**	**$ 233,000**	**$ 3,133,000**	**$ 15,011,000**	**$ (7,687,000)**
Unit 2						
Asbestos Removal	$ -	$ -	$ -	$ 2,602,000	$ 2,602,000	$ -
Boiler	$ 2,318,000	$ 2,220,000	$ -	$ -	$ 4,538,000	$ -
Steam Turbine & Building	$ 1,169,000	$ 1,120,000	$ -	$ -	$ 2,289,000	$ -
Precipitator	$ 502,000	$ 481,000	$ -	$ -	$ 983,000	$ -
SCR	$ 646,000	$ 619,000	$ -	$ -	$ 1,265,000	$ -
Scrubber / FGD	$ 559,000	$ 535,000	$ -	$ -	$ 1,094,000	$ -
Baghouse	$ 718,000	$ 688,000	$ -	$ -	$ 1,406,000	$ -
Stacks	$ 147,000	$ 141,000	$ -	$ -	$ 288,000	$ -
Cooling Water Intakes and Circulating Water Pumps	$ 16,000	$ 15,000	$ -	$ -	$ 31,000	$ -
GSU & Foundation	$ 79,000	$ 76,000	$ -	$ -	$ 155,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 220,000	$ -	$ 220,000	$ -
Debris	$ -	$ -	$ 30,000	$ -	$ 30,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (7,519,000)
Subtotal	**$ 6,154,000**	**$ 5,895,000**	**$ 250,000**	**$ 2,602,000**	**$ 14,901,000**	**$ (7,519,000)**
Handling						
Coal Handling Facilites	$ 614,000	$ 588,000	$ -	$ -	$ 1,202,000	$ -
Coal Storage Area Restoration	$ -	$ -	$ -	$ 10,027,000	$ 10,027,000	$ -
Limestone Handling Facilities	$ 64,000	$ 61,000	$ -	$ -	$ 125,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 9,000	$ -	$ 9,000	$ -
Debris	$ -	$ -	$ 67,000	$ -	$ 67,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (663,000)
Subtotal	**$ 678,000**	**$ 649,000**	**$ 76,000**	**$ 10,027,000**	**$ 11,430,000**	**$ (663,000)**
Common						
Cooling Water Intakes and Circulating Water Pumps	$ 50,000	$ 48,000	$ -	$ 992,000	$ 1,090,000	$ -
BOP Misc.	$ 551,000	$ 528,000	$ -	$ -	$ 1,079,000	$ -
Roads	$ 46,000	$ 44,000	$ -	$ -	$ 90,000	$ -
All BOP Buildings	$ 447,000	$ 429,000	$ -	$ -	$ 876,000	$ -
Fuel Equipment	$ 228,000	$ 219,000	$ -	$ -	$ 447,000	$ -
All Other Tanks	$ 491,000	$ 470,000	$ -	$ -	$ 961,000	$ -
Transformers & Foundation	$ 100,000	$ 96,000	$ -	$ 295,000	$ 491,000	$ -
Mercury & Universal Waste Disposal	$ -	$ -	$ -	$ 91,000	$ 91,000	$ -
Pond Closure	$ -	$ -	$ -	$ 518,000	$ 518,000	$ -
Landfill Closure	$ -	$ -	$ -	$ 31,831,000	$ 31,831,000	$ -
Plant Washdown & Materials Disposal	$ -	$ -	$ -	$ 52,000	$ 52,000	$ -
Concrete Removal, Crushing, & Disposal	$ -	$ -	$ 115,000	$ -	$ 115,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 2,229,000	$ 2,229,000	$ -
Debris	$ -	$ -	$ 14,000	$ -	$ 14,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (1,208,000)
Subtotal	**$ 1,913,000**	**$ 1,834,000**	**$ 129,000**	**$ 36,008,000**	**$ 39,884,000**	**$ (1,208,000)**
LaCygne Subtotal	**$ 14,693,000**	**$ 14,075,000**	**$ 688,000**	**$ 51,770,000**	**$ 81,226,000**	**$ (17,077,000)**
TOTAL DECOM COST (CREDIT)					**$ 81,226,000**	**$ (17,077,000)**
PROJECT INDIRECTS (5%)					**$ 4,061,000**	
CONTINGENGY (20%)					**$ 16,245,000**	
TOTAL PROJECT COST (CREDIT)					**$ 101,532,000**	**$ (17,077,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 84,455,000**	

Table A-9
Lake Road
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Lake Road						
Unit 1						
Asbestos Removal	$ -	$ -	$ -	$ 66,000	$ 66,000	$ -
Boiler	$ 446,000	$ 291,000	$ -	$ -	$ 737,000	$ -
Steam Turbine & Building	$ 240,000	$ 157,000	$ -	$ -	$ 397,000	$ -
Stacks	$ 4,000	$ 3,000	$ -	$ -	$ 7,000	$ -
GSU & Foundation	$ 20,000	$ 13,000	$ -	$ -	$ 33,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 12,000	$ -	$ 12,000	$ -
Debris	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (769,000)
Subtotal	**$ 710,000**	**$ 464,000**	**$ 19,000**	**$ 66,000**	**$ 1,259,000**	**$ (769,000)**
Unit 2						
Asbestos Removal	$ -	$ -	$ -	$ 72,000	$ 72,000	$ -
Boiler	$ 456,000	$ 298,000	$ -	$ -	$ 754,000	$ -
Steam Turbine & Building	$ 243,000	$ 159,000	$ -	$ -	$ 402,000	$ -
Precipitator	$ 91,000	$ 59,000	$ -	$ -	$ 150,000	$ -
Baghouse	$ 4,000	$ 3,000	$ -	$ -	$ 7,000	$ -
Stacks	$ 4,000	$ 3,000	$ -	$ -	$ 7,000	$ -
Cooling Water Intakes and Circulating Water Pumps	$ 1,000	$ -	$ -	$ -	$ 1,000	$ -
GSU & Foundation	$ 20,000	$ 13,000	$ -	$ -	$ 33,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 14,000	$ -	$ 14,000	$ -
Debris	$ -	$ -	$ 10,000	$ -	$ 10,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (859,000)
Subtotal	**$ 819,000**	**$ 535,000**	**$ 24,000**	**$ 72,000**	**$ 1,450,000**	**$ (859,000)**
Unit 3						
Asbestos Removal	$ -	$ -	$ -	$ 36,000	$ 36,000	$ -
Boiler	$ 318,000	$ 208,000	$ -	$ -	$ 526,000	$ -
Steam Turbine & Building	$ 213,000	$ 139,000	$ -	$ -	$ 352,000	$ -
Precipitator	$ 74,000	$ 48,000	$ -	$ -	$ 122,000	$ -
GSU & Foundation	$ 20,000	$ 13,000	$ -	$ -	$ 33,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 13,000	$ -	$ 13,000	$ -
Debris	$ -	$ -	$ 5,000	$ -	$ 5,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (615,000)
Subtotal	**$ 625,000**	**$ 408,000**	**$ 18,000**	**$ 36,000**	**$ 1,087,000**	**$ (615,000)**
Unit 4						
Asbestos Removal	$ -	$ -	$ -	$ 258,000	$ 258,000	$ -
Boiler	$ 913,000	$ 596,000	$ -	$ -	$ 1,509,000	$ -
Steam Turbine & Building	$ 351,000	$ 229,000	$ -	$ -	$ 580,000	$ -
Precipitator	$ 207,000	$ 135,000	$ -	$ -	$ 342,000	$ -
Cooling Water Intakes and Circulating Water Pumps	$ 7,000	$ 4,000	$ -	$ -	$ 11,000	$ -
GSU & Foundation	$ 20,000	$ 13,000	$ -	$ -	$ 33,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 19,000	$ -	$ 19,000	$ -
Debris	$ -	$ -	$ 19,000	$ -	$ 19,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (1,660,000)
Subtotal	**$ 1,498,000**	**$ 977,000**	**$ 38,000**	**$ 258,000**	**$ 2,771,000**	**$ (1,660,000)**
Unit 5						
CTGs and HRSGs	$ 177,000	$ 116,000	$ -	$ -	$ 293,000	$ -
Stacks	$ 4,000	$ 2,000	$ -	$ -	$ 6,000	$ -
GSU & Foundation	$ 20,000	$ 13,000	$ -	$ -	$ 33,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 1,000	$ -	$ 1,000	$ -
Debris	$ -	$ -	$ 12,000	$ -	$ 12,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (437,000)
Subtotal	**$ 201,000**	**$ 131,000**	**$ 13,000**	**$ -**	**$ 345,000**	**$ (437,000)**
Unit 6						
CTGs and HRSGs	$ 56,000	$ 36,000	$ -	$ -	$ 92,000	$ -
Stacks	$ 4,000	$ 2,000	$ -	$ -	$ 6,000	$ -
GSU & Foundation	$ 20,000	$ 13,000	$ -	$ -	$ 33,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 1,000	$ -	$ 1,000	$ -
Debris	$ -	$ -	$ 3,000	$ -	$ 3,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (175,000)
Subtotal	**$ 80,000**	**$ 51,000**	**$ 4,000**	**$ -**	**$ 135,000**	**$ (175,000)**
Unit 7						
CTGs and HRSGs	$ 46,000	$ 30,000	$ -	$ -	$ 76,000	$ -
Stacks	$ 4,000	$ 2,000	$ -	$ -	$ 6,000	$ -
GSU & Foundation	$ 10,000	$ 7,000	$ -	$ -	$ 17,000	$ -
Debris	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (154,000)
Subtotal	**$ 60,000**	**$ 39,000**	**$ 2,000**	**$ -**	**$ 101,000**	**$ (154,000)**
Handling						
Coal Handling Facilites	$ 253,000	$ 165,000	$ -	$ -	$ 418,000	$ -
Coal Storage Area Restoration	$ -	$ -	$ -	$ 2,580,000	$ 2,580,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 1,000	$ -	$ 1,000	$ -
Debris	$ -	$ -	$ 48,000	$ -	$ 48,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (200,000)
Subtotal	**$ 253,000**	**$ 165,000**	**$ 49,000**	**$ 2,580,000**	**$ 3,047,000**	**$ (200,000)**

Common						
Cooling Water Intakes and Circulating Water Pumps	$ 90,000	$ 59,000	$ -	$ 52,000	$ 201,000	$ -
BOP Misc.	$ 5,000	$ 3,000	$ -	$ -	$ 8,000	$ -
Roads	$ 92,000	$ 60,000	$ -	$ -	$ 152,000	$ -
All BOP Buildings	$ 202,000	$ 132,000	$ -	$ -	$ 334,000	$ -
Fuel Equipment	$ 115,000	$ 75,000	$ -	$ 187,000	$ 377,000	$ -
All Other Tanks	$ 178,000	$ 116,000	$ -	$ -	$ 294,000	$ -
Transformers & Foundation	$ 41,000	$ 27,000	$ -	$ 104,000	$ 172,000	$ -
Mercury & Universal Waste Disposal	$ -	$ -	$ -	$ 28,000	$ 28,000	$ -
Closure of Deep Wells	$ -	$ -	$ -	$ 238,000	$ 238,000	$ -
Pond Closure	$ -	$ -	$ -	$ 146,000	$ 146,000	$ -
Cooling Towers and Basin	$ 79,000	$ 52,000	$ -	$ -	$ 131,000	$ -
Plant Washdown & Materials Disposal	$ -	$ -	$ -	$ 57,000	$ 57,000	$ -
Concrete Removal, Crushing, & Disposal	$ -	$ -	$ 28,000	$ -	$ 28,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 1,655,000	$ 1,655,000	$ -
Debris	$ -	$ -	$ 6,000	$ -	$ 6,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (311,000)
Subtotal	**$ 802,000**	**$ 524,000**	**$ 34,000**	**$ 2,467,000**	**$ 3,827,000**	**$ (311,000)**
Lake Road Subtotal	**$ 5,048,000**	**$ 3,294,000**	**$ 201,000**	**$ 5,479,000**	**$ 14,022,000**	**$ (5,180,000)**
TOTAL DECOM COST (CREDIT)					**$ 14,022,000**	**$ (5,180,000)**
PROJECT INDIRECTS (5%)					**$ 701,000**	
CONTINGENGY (20%)					**$ 2,804,000**	
TOTAL PROJECT COST (CREDIT)					**$ 17,527,000**	**$ (5,180,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 12,347,000**	

Table A-10
Lake Road LFG
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Lake Road LFG						
Landfill Gas Unit						
Generator	$ 15,000	$ 10,000	$ -	$ -	$ 25,000	$ -
Collection Piping and Equipment	$ 81,000	$ 53,000	$ -	$ -	$ 134,000	$ -
GSU & Foundation	$ 2,000	$ 1,000	$ -	$ 2,000	$ 5,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (149,000)
Subtotal	**$ 98,000**	**$ 64,000**	**$ -**	**$ 2,000**	**$ 164,000**	**$ (149,000)**
Common						
All BOP Buildings	$ 3,000	$ 2,000	$ -	$ -	$ 5,000	$ -
All Other Tanks	$ 7,000	$ 5,000	$ -	$ -	$ 12,000	$ -
Transformers & Foundation	$ 6,000	$ 4,000	$ -	$ -	$ 10,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 18,000	$ 18,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (12,000)
Subtotal	**$ 16,000**	**$ 11,000**	**$ -**	**$ 18,000**	**$ 45,000**	**$ (12,000)**
Lake Road LFG Subtotal	**$ 114,000**	**$ 75,000**	**$ -**	**$ 20,000**	**$ 209,000**	**$ (161,000)**
TOTAL DECOM COST (CREDIT)					**$ 209,000**	**$ (161,000)**
PROJECT INDIRECTS (5%)					**$ 10,000**	
CONTINGENGY (20%)					**$ 42,000**	
TOTAL PROJECT COST (CREDIT)					**$ 261,000**	**$ (161,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 100,000**	

Table A-11
Nevada
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Nevada						
Unit 1						
CTGs and HRSGs	$ 60,000	$ 39,000	$ -	$ -	$ 99,000	$ -
Stacks	$ 4,000	$ 3,000	$ -	$ -	$ 7,000	$ -
GSU & Foundation	$ 5,000	$ 3,000	$ -	$ -	$ 8,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
Debris	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (155,000)
Subtotal	**$ 69,000**	**$ 45,000**	**$ 4,000**	**$ -**	**$ 118,000**	**$ (155,000)**
Common						
Switchgear & Electrical	$ 8,000	$ 5,000	$ -	$ -	$ 13,000	$ -
All BOP Buildings	$ 7,000	$ 4,000	$ -	$ -	$ 11,000	$ -
Fuel Equipment	$ -	$ -	$ -	$ 150,000	$ 150,000	$ -
Transformers & Foundation	$ -	$ -	$ -	$ 5,000	$ 5,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 52,000	$ 52,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (10,000)
Subtotal	**$ 15,000**	**$ 9,000**	**$ -**	**$ 207,000**	**$ 231,000**	**$ (10,000)**
Nevada Subtotal	**$ 84,000**	**$ 54,000**	**$ 4,000**	**$ 207,000**	**$ 349,000**	**$ (165,000)**
TOTAL DECOM COST (CREDIT)					**$ 349,000**	**$ (165,000)**
PROJECT INDIRECTS (5%)					**$ 17,000**	
CONTINGENGY (20%)					**$ 70,000**	
TOTAL PROJECT COST (CREDIT)					**$ 436,000**	**$ (165,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 271,000**	

Table A-12
Northeast
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Northeast						
Units 11-12						
CTGs and HRSGs	$ 251,000	$ 164,000	$ -	$ -	$ 415,000	$ -
Stacks	$ 8,000	$ 6,000	$ -	$ -	$ 14,000	$ -
GSU & Foundation	$ 32,000	$ 21,000	$ -	$ -	$ 53,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 3,000	$ -	$ 3,000	$ -
Debris	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (582,000)
Subtotal	**$ 291,000**	**$ 191,000**	**$ 18,000**	**$ -**	**$ 500,000**	**$ (582,000)**
Units 13-18						
CTGs and HRSGs	$ 923,000	$ 603,000	$ -	$ -	$ 1,526,000	$ -
Stacks	$ 25,000	$ 17,000	$ -	$ -	$ 42,000	$ -
GSU & Foundation	$ 94,000	$ 61,000	$ -	$ -	$ 155,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 9,000	$ -	$ 9,000	$ -
Debris	$ -	$ -	$ 57,000	$ -	$ 57,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (2,155,000)
Subtotal	**$ 1,042,000**	**$ 681,000**	**$ 66,000**	**$ -**	**$ 1,789,000**	**$ (2,155,000)**
Common						
BOP Misc.	$ 450,000	$ 294,000	$ -	$ -	$ 744,000	$ -
Roads	$ 239,000	$ 156,000	$ -	$ -	$ 395,000	$ -
All BOP Buildings	$ 532,000	$ 347,000	$ -	$ -	$ 879,000	$ -
Fuel Equipment	$ 206,000	$ 135,000	$ -	$ 482,000	$ 823,000	$ -
Transformers & Foundation	$ 7,000	$ 4,000	$ -	$ 54,000	$ 65,000	$ -
Concrete Removal, Crushing, & Disposal	$ -	$ -	$ 61,000	$ -	$ 61,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 202,000	$ 202,000	$ -
Debris	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (245,000)
Subtotal	**$ 1,434,000**	**$ 936,000**	**$ 63,000**	**$ 738,000**	**$ 3,171,000**	**$ (245,000)**
Northeast Subtotal	**$ 2,767,000**	**$ 1,808,000**	**$ 147,000**	**$ 738,000**	**$ 5,460,000**	**$ (2,982,000)**
TOTAL DECOM COST (CREDIT)					**$ 5,460,000**	**$ (2,982,000)**
PROJECT INDIRECTS (5%)					**$ 273,000**	
CONTINGENGY (20%)					**$ 1,092,000**	
TOTAL PROJECT COST (CREDIT)					**$ 6,825,000**	**$ (2,982,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 3,843,000**	

Table A-13
Osawatomie
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Osawatomie						
Unit 1						
CTGs and HRSGs	$ 186,000	$ 179,000	$ -	$ -	$ 365,000	$ -
Stacks	$ 3,000	$ 3,000	$ -	$ -	$ 6,000	$ -
GSU & Foundation	$ 40,000	$ 38,000	$ -	$ 22,000	$ 100,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 3,000	$ -	$ 3,000	$ -
Debris	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (622,000)
Subtotal	**$ 229,000**	**$ 220,000**	**$ 14,000**	**$ 22,000**	**$ 485,000**	**$ (622,000)**
Common						
All BOP Buildings	$ 7,000	$ 7,000	$ -	$ -	$ 14,000	$ -
Switchgear & Electrical	$ 5,000	$ 4,000	$ -	$ -	$ 9,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 105,000	$ 105,000	$ -
Debris	$ -	$ -	$ 1,000	$ -	$ 1,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (9,000)
Subtotal	**$ 12,000**	**$ 11,000**	**$ 1,000**	**$ 105,000**	**$ 129,000**	**$ (9,000)**
Osawatomie Subtotal	**$ 241,000**	**$ 231,000**	**$ 15,000**	**$ 127,000**	**$ 614,000**	**$ (631,000)**
TOTAL DECOM COST (CREDIT)					**$ 614,000**	**$ (631,000)**
PROJECT INDIRECTS (5%)					**$ 31,000**	
CONTINGENGY (20%)					**$ 123,000**	
TOTAL PROJECT COST (CREDIT)					**$ 768,000**	**$ (631,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 137,000**	

Table A-14
Ralph Green
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Ralph Green						
Unit 1						
CTGs and HRSGs	$ 182,000	$ 119,000	$ -	$ -	$ 301,000	$ -
Stacks	$ 4,000	$ 2,000	$ -	$ -	$ 6,000	$ -
GSU & Foundation	$ 22,000	$ 14,000	$ -	$ 18,000	$ 54,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 3,000	$ -	$ 3,000	$ -
Debris	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (481,000)
Subtotal	**$ 208,000**	**$ 135,000**	**$ 18,000**	**$ 18,000**	**$ 379,000**	**$ (481,000)**
Common						
BOP Misc.	$ 3,000	$ 2,000	$ -	$ -	$ 5,000	$ -
Roads	$ 44,000	$ 29,000	$ -	$ -	$ 73,000	$ -
All BOP Buildings	$ 148,000	$ 97,000	$ -	$ -	$ 245,000	$ -
Fuel Equipment	$ 3,000	$ 2,000	$ -	$ -	$ 5,000	$ -
All Other Tanks	$ 7,000	$ 5,000	$ -	$ -	$ 12,000	$ -
Transformers & Foundation	$ 6,000	$ 4,000	$ -	$ -	$ 10,000	$ -
Concrete Removal, Crushing, & Disposal	$ -	$ -	$ 8,000	$ -	$ 8,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 143,000	$ 143,000	$ -
Debris	$ -	$ -	$ 37,000	$ -	$ 37,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (19,000)
Subtotal	**$ 211,000**	**$ 139,000**	**$ 45,000**	**$ 143,000**	**$ 538,000**	**$ (19,000)**
Ralph Green Subtotal	**$ 419,000**	**$ 274,000**	**$ 63,000**	**$ 161,000**	**$ 917,000**	**$ (500,000)**
TOTAL DECOM COST (CREDIT)					**$ 917,000**	**$ (500,000)**
PROJECT INDIRECTS (5%)					**$ 46,000**	
CONTINGENGY (20%)					**$ 183,000**	
TOTAL PROJECT COST (CREDIT)					**$ 1,146,000**	**$ (500,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 646,000**	

Table A-15
South Harper
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
South Harper						
Unit 1 - 3						
CTGs and HRSGs	$ 718,000	$ 468,000	$ -	$ -	$ 1,186,000	$ -
Stacks	$ 11,000	$ 7,000	$ -	$ -	$ 18,000	$ -
GSU & Foundation	$ 123,000	$ 80,000	$ -	$ 18,000	$ 221,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 10,000	$ -	$ 10,000	$ -
Debris	$ -	$ -	$ 48,000	$ -	$ 48,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (1,664,000)
Subtotal	**$ 852,000**	**$ 555,000**	**$ 58,000**	**$ 18,000**	**$ 1,483,000**	**$ (1,664,000)**
Common						
BOP Misc.	$ 5,000	$ 3,000	$ -	$ -	$ 8,000	$ -
All BOP Buildings	$ 87,000	$ 57,000	$ -	$ -	$ 144,000	$ -
Tanks	$ 29,000	$ 19,000	$ -	$ -	$ 48,000	$ -
Concrete Removal, Crushing, & Disposal	$ -	$ -	$ 5,000	$ -	$ 5,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 239,000	$ 239,000	$ -
Debris	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (43,000)
Subtotal	**$ 121,000**	**$ 79,000**	**$ 7,000**	**$ 239,000**	**$ 446,000**	**$ (43,000)**
South Harper Subtotal	**$ 973,000**	**$ 634,000**	**$ 65,000**	**$ 257,000**	**$ 1,929,000**	**$ (1,707,000)**
TOTAL DECOM COST (CREDIT)					**$ 1,929,000**	**$ (1,707,000)**
PROJECT INDIRECTS (5%)					**$ 96,000**	
CONTINGENGY (20%)					**$ 386,000**	
TOTAL PROJECT COST (CREDIT)					**$ 2,411,000**	**$ (1,707,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 704,000**	

Table A-16: Estimated Cost for Wind Turbine Decommissioning (2021$)

Spearville Wind Project

Decommissioning Cost Evaluation

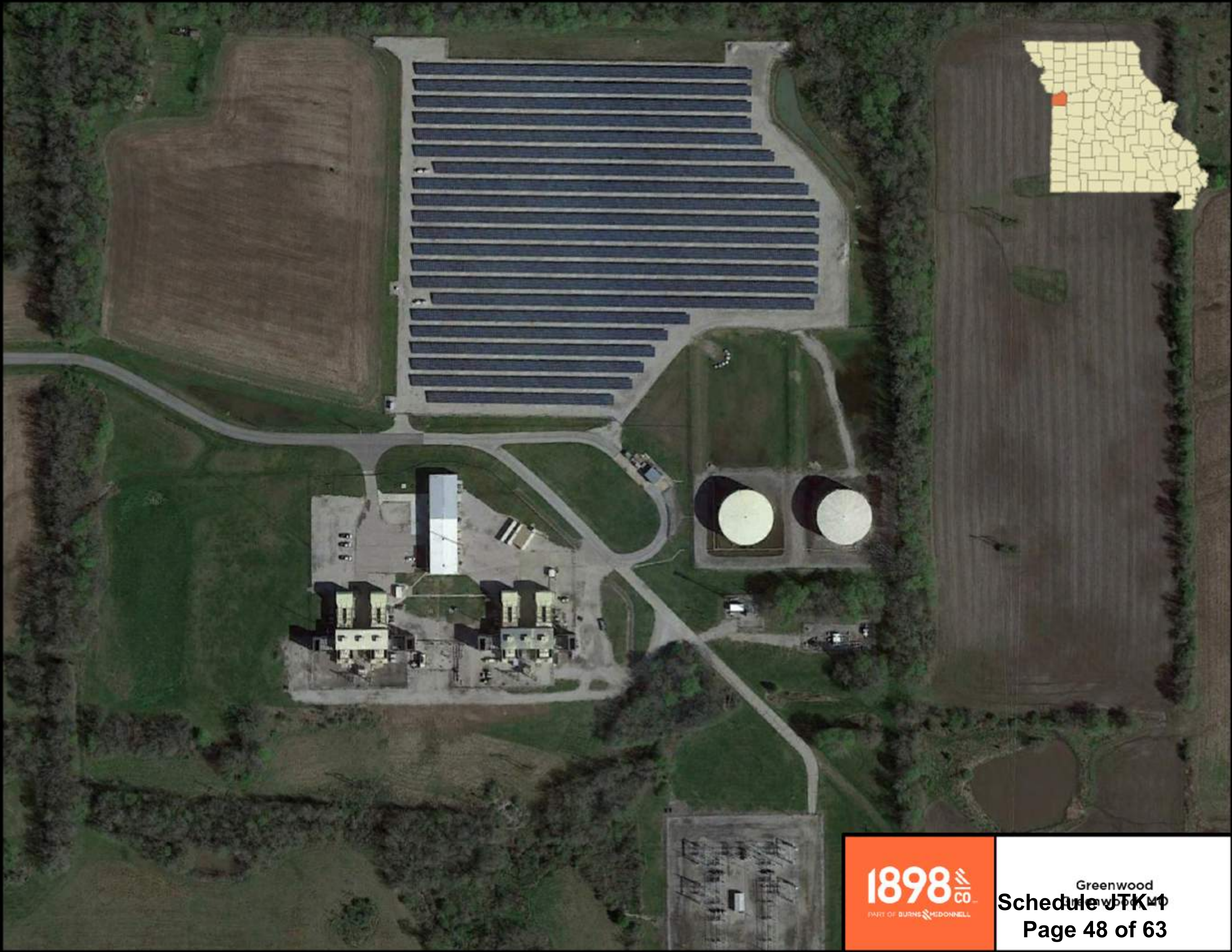
Wind Turbine Removal Cost		
Removal	$	6,486,000
Hauling & Disposal	$	284,000
Total	**$**	**6,770,000**
Scrap Value	**$**	**(6,704,000)**
Wind Turbine Foundation Removal Cost		
Removal	$	537,000
Hauling & Disposal	$	490,000
Total	**$**	**1,027,000**
Scrap Value	**$**	**-**
Substation Removal Cost		
Removal	$	335,000
Hauling & Disposal	$	29,000
Total	**$**	**364,000**
Scrap Value	**$**	**(607,000)**
Civil Works Removal Cost		
Removal	$	1,096,000
Hauling & Disposal	$	390,000
Grading & Seeding Costs	$	487,000
Total	**$**	**1,973,000**
Scrap Value	**$**	**-**
Met Tower Removal		
Removal	$	19,000
Hauling & Disposal	$	1,000
Total	**$**	**20,000**
Scrap Value	**$**	**(2,000)**
Other Costs		
Oils & Chemicals Removal & Disposal	$	84,000
Total	**$**	**84,000**
Total Estimated Cost	**$**	**10,238,000**
Owner Indirects (5%)	**$**	**511,900**
Contingency (20%)	**$**	**2,047,600**
Total Gross Cost	**$**	**12,797,500**
Total Scrap Value	**$**	**(7,313,000)**
Total Net Cost	**$**	**5,484,500**

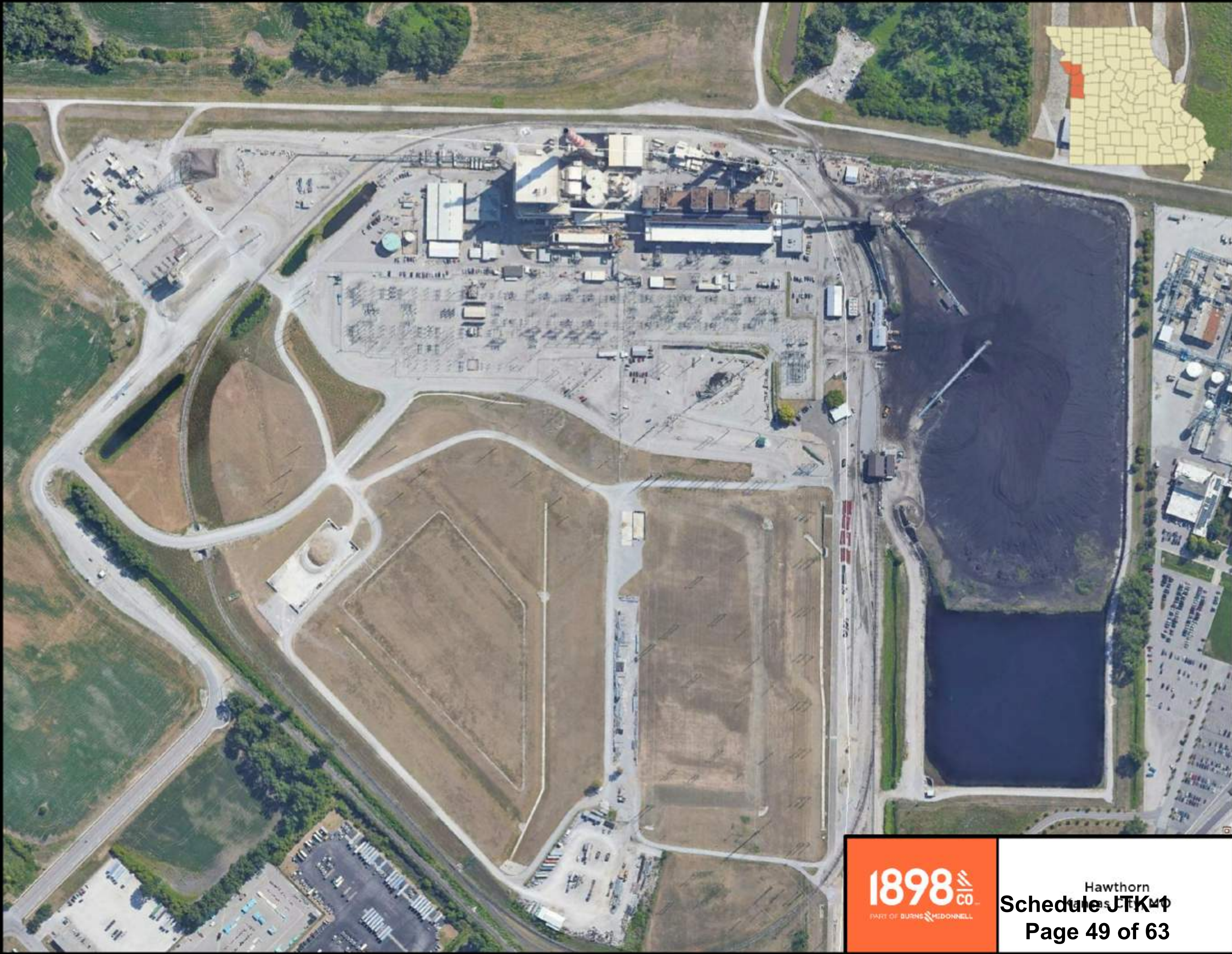
Table A-17
West Gardner
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
West Gardner						
Units 1-4						
CTGs and HRSGs	$ 696,000	$ 667,000	$ -	$ -	$ 1,363,000	$ -
Stacks	$ 15,000	$ 14,000	$ -	$ -	$ 29,000	$ -
GSU & Foundation	$ 150,000	$ 144,000	$ -	$ 62,000	$ 356,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 10,000	$ -	$ 10,000	$ -
Debris	$ -	$ -	$ 83,000	$ -	$ 83,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (2,279,000)
Subtotal	**$ 861,000**	**$ 825,000**	**$ 93,000**	**$ 62,000**	**$ 1,841,000**	**$ (2,279,000)**
Common						
BOP Misc.	$ 4,000	$ 4,000	$ -	$ -	$ 8,000	$ -
Roads	$ 1,000	$ 1,000	$ -	$ -	$ 2,000	$ -
All BOP Buildings	$ 25,000	$ 24,000	$ -	$ -	$ 49,000	$ -
Switchgear & Electrical	$ 5,000	$ 5,000	$ -	$ -	$ 10,000	$ -
Concrete Removal, Crushing, & Disposal	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 289,000	$ 289,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (22,000)
Subtotal	**$ 35,000**	**$ 34,000**	**$ 2,000**	**$ 289,000**	**$ 360,000**	**$ (22,000)**
West Gardner Subtotal	**$ 896,000**	**$ 859,000**	**$ 95,000**	**$ 351,000**	**$ 2,201,000**	**$ (2,301,000)**
TOTAL DECOM COST (CREDIT)					**$ 2,201,000**	**$ (2,301,000)**
PROJECT INDIRECTS (5%)					**$ 110,000**	
CONTINGENGY (20%)					**$ 440,000**	
TOTAL PROJECT COST (CREDIT)					**$ 2,751,000**	**$ (2,301,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 450,000**	

APPENDIX B – SITE AERIALS


Crossroad


Greenwood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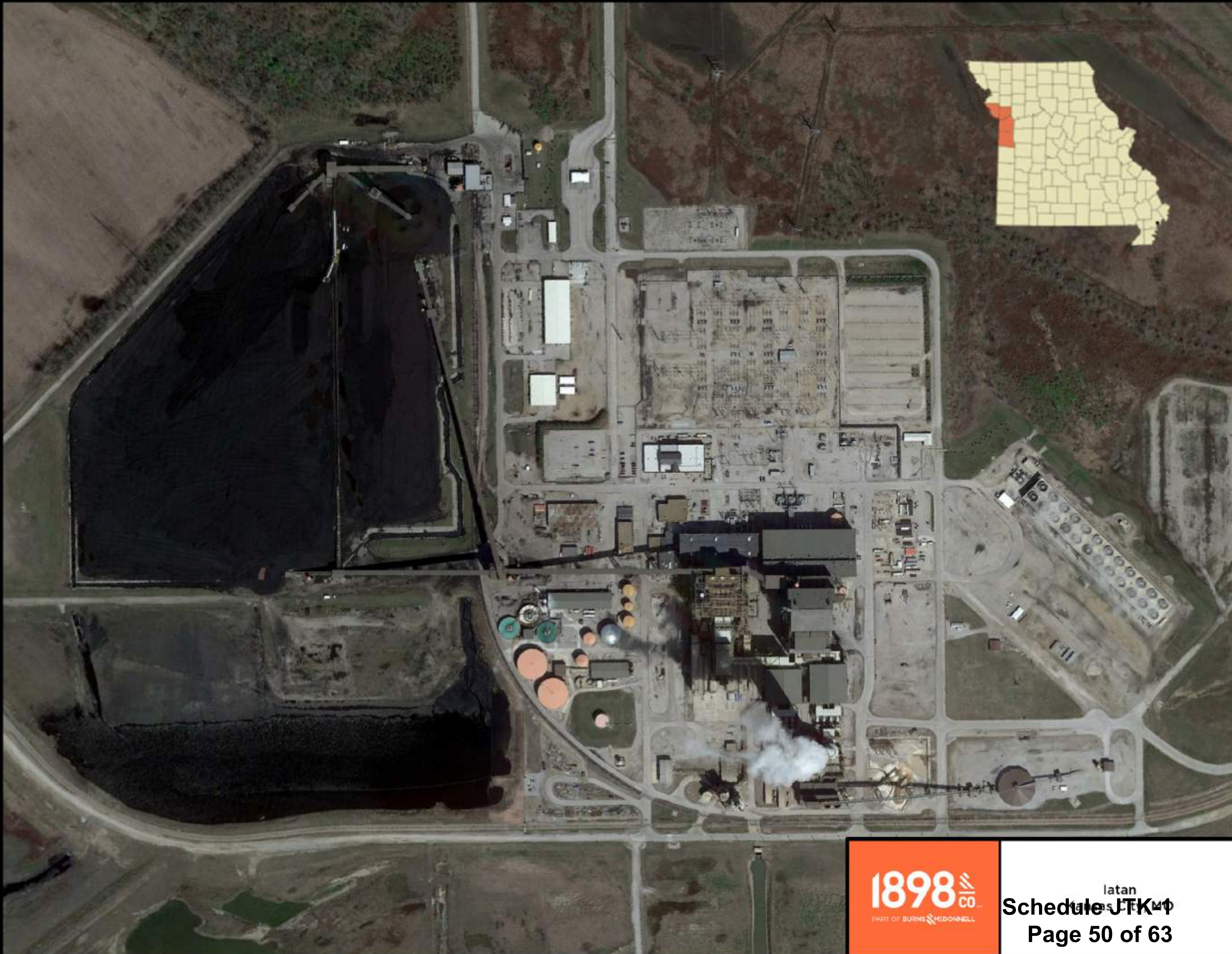
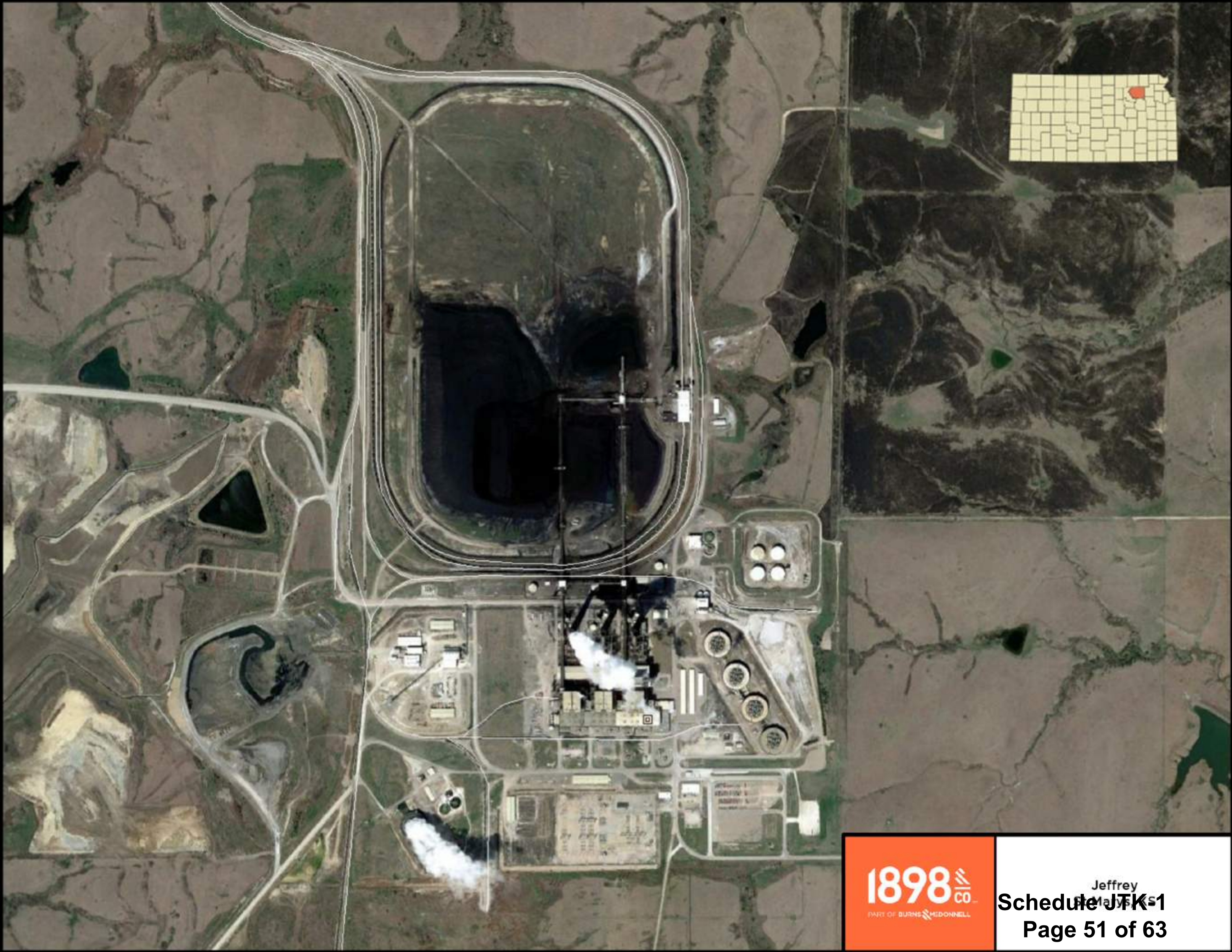


Iatan

Kansas City, MO


Jeffrey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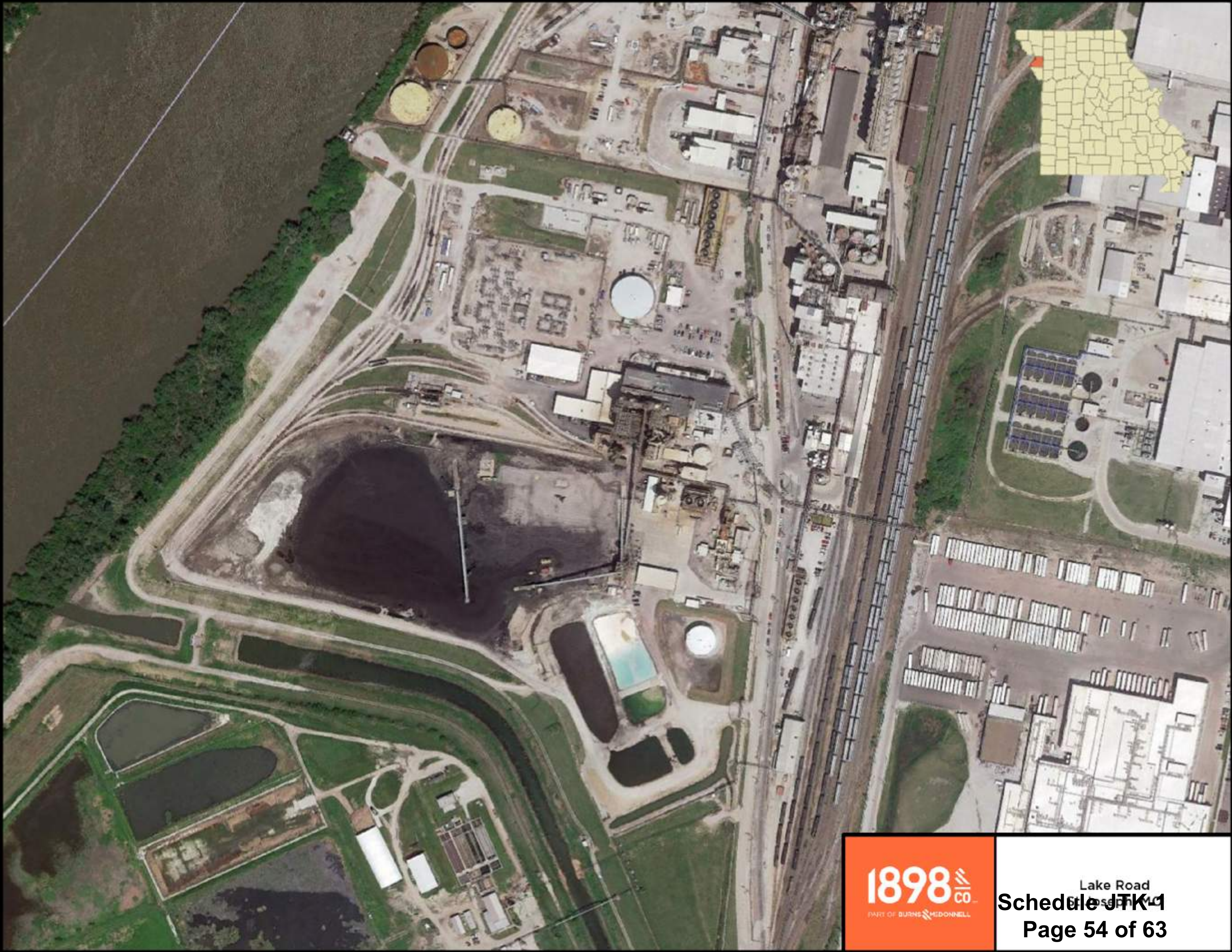
KCI
Weston, MO


LaCygne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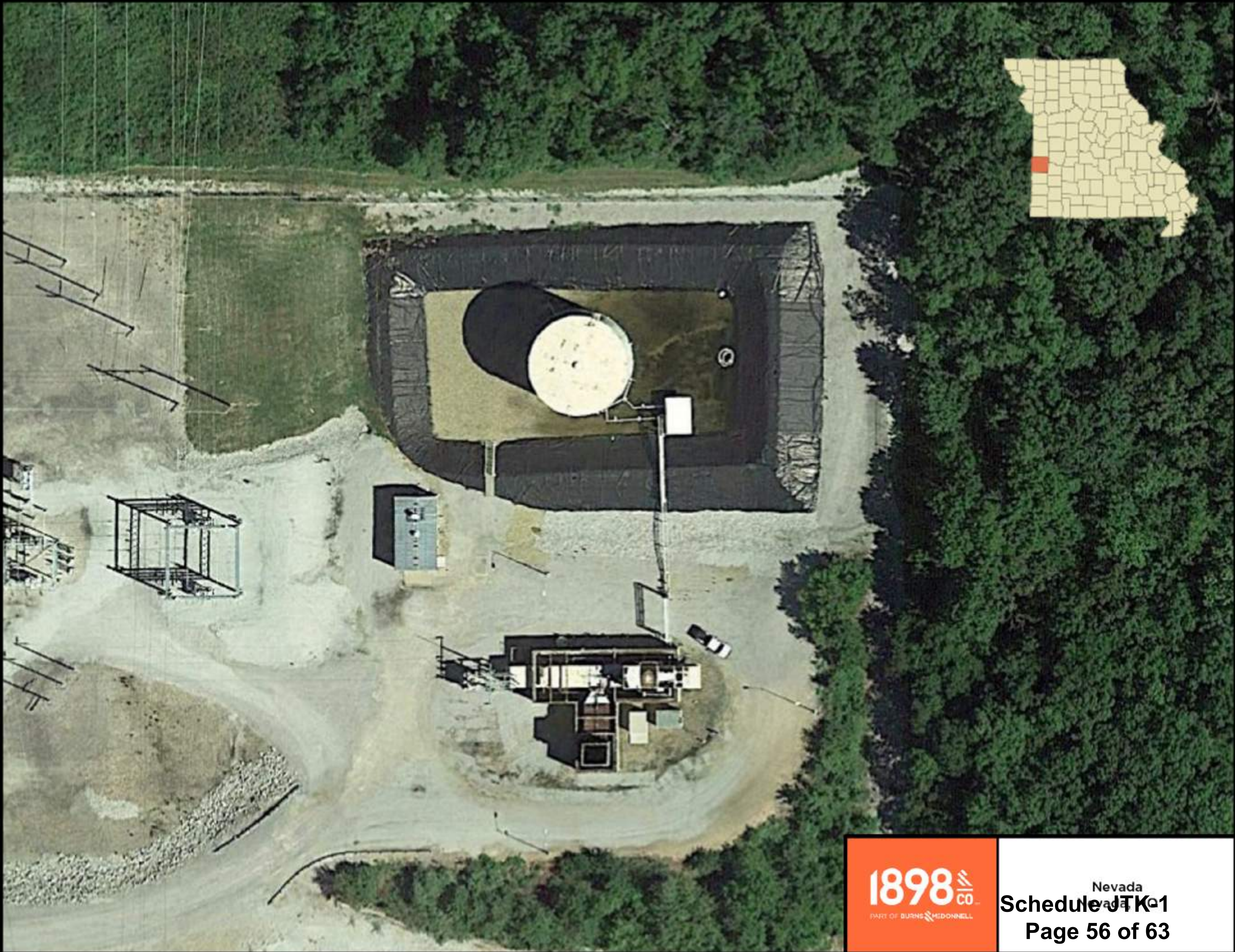
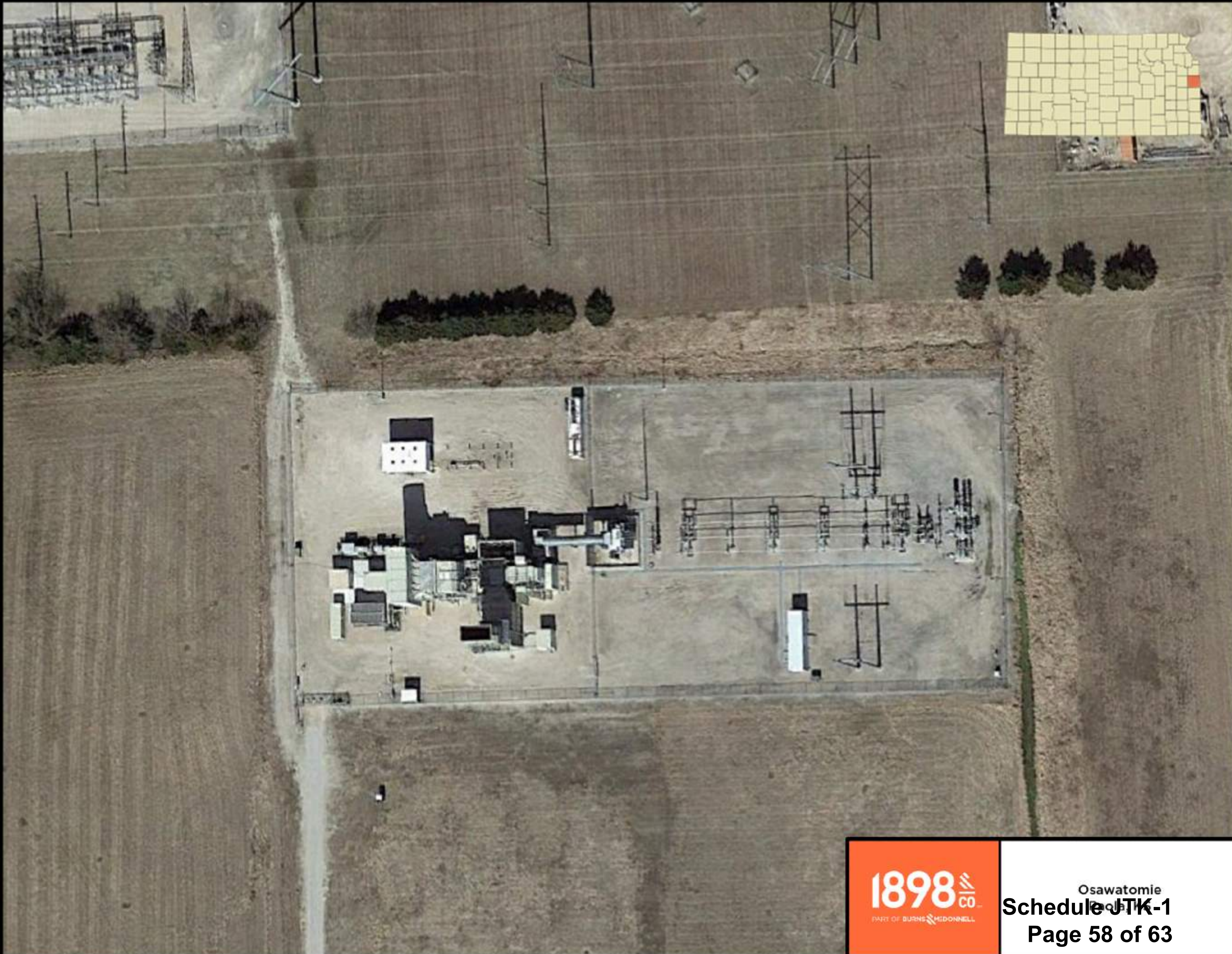
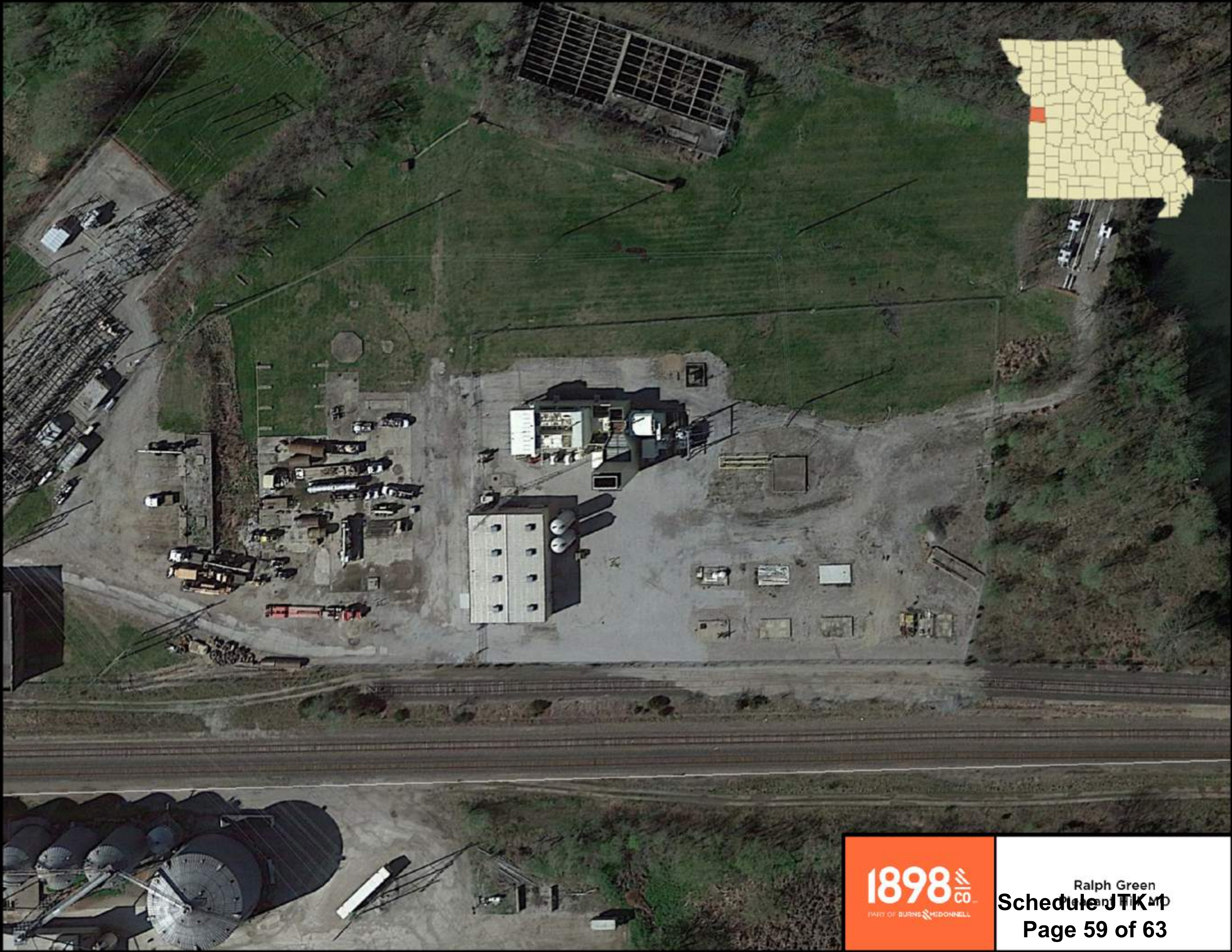
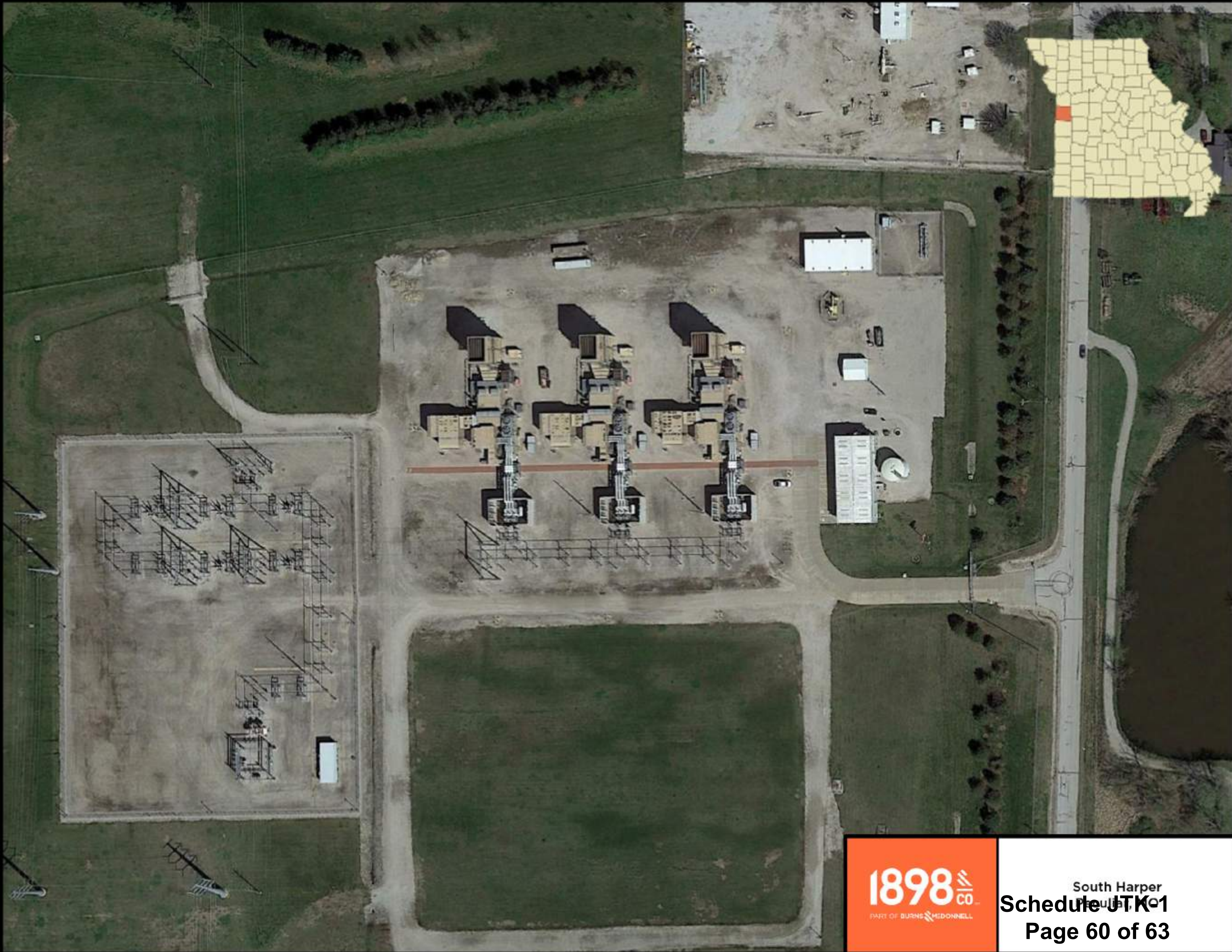
Lake Road LFG
St. Joseph, MO

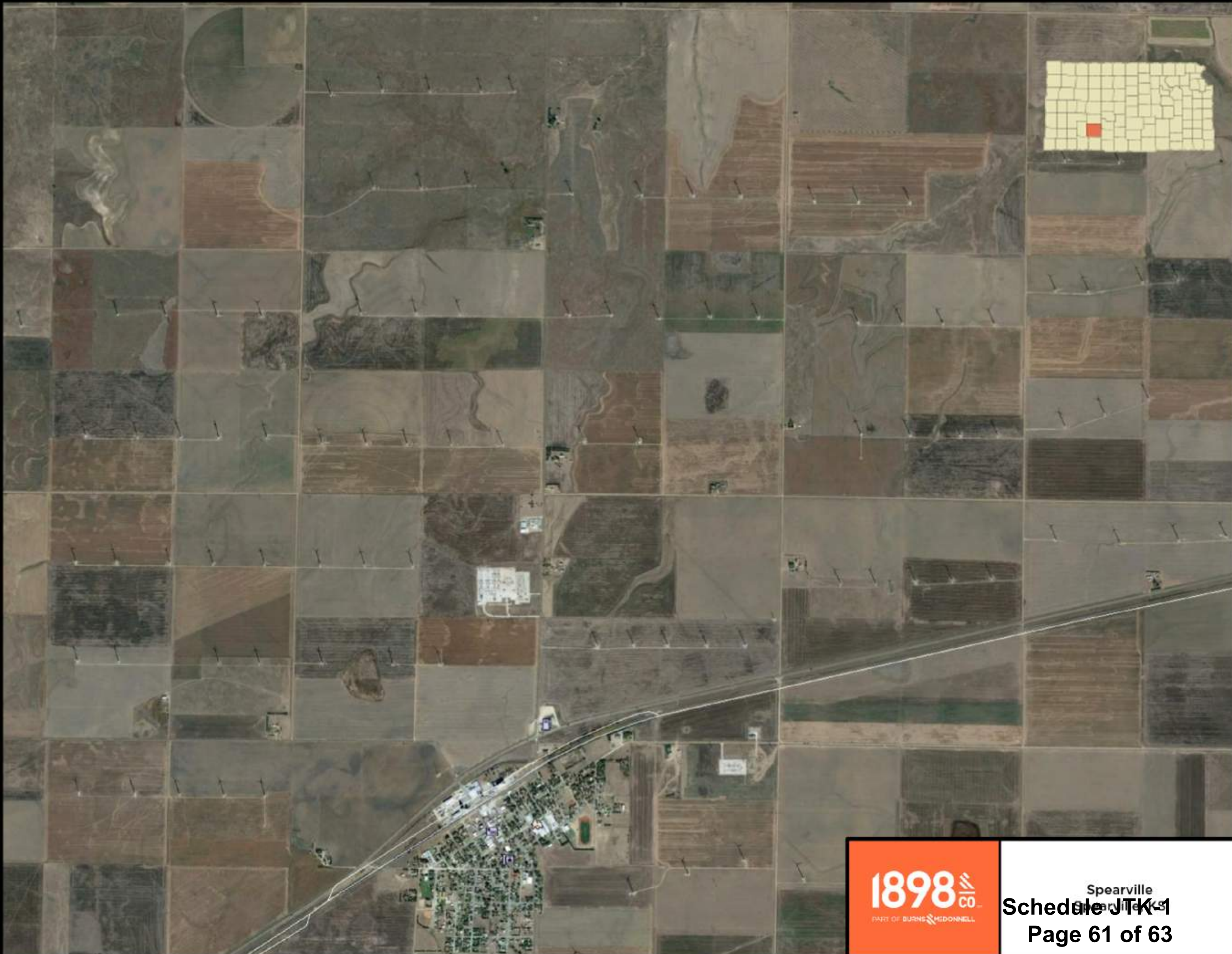

Nevada

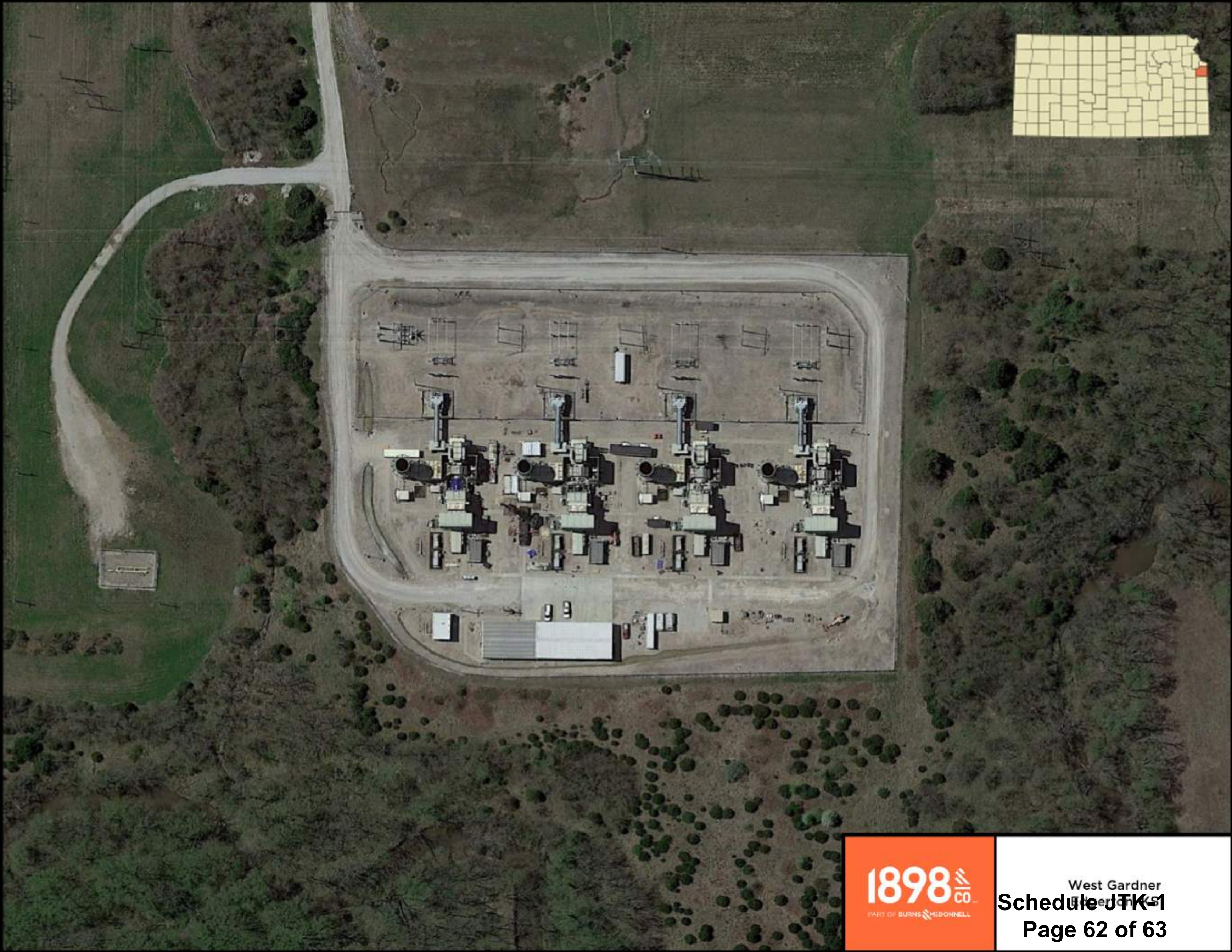

Northeast
Kansas City, MO


Osawatomie


Ralph Green


South Harper


1898 & CO.
PART OF BURNS & McDONNELL
Spearville
Spearville, KS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West Gardner

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Kansas City, MO

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Project Director

Jeff Kopp, PE

Managing Director – Utility Consulting

Education
B.S. / Civil Engineering
MBA / Business Administration

Registrations
- Professional Engineer (FL, IL, IN, MO)

19 years with 1898 & Co.
21 years of experience

Visit my **LinkedIn** profile.

Jeff is the Managing Director of Utility Consulting at 1898 & Co., part of Burns & McDonnell. He and his team specialize in consulting services for power generation and transmission and distribution projects. This includes power plant decommissioning studies, energy project development, due diligence reviews, resource planning, renewable project development, rate studies and analysis, transmission planning, distribution planning, and grid modernization.

PROJECT EXPERIENCE

Decommissioning Study / Evergy
Kansas, Missouri / 2021

Project director on a decommissioning study for the entire fleet of power generating facilities owned by Evergy in the States of Kansas and Missouri. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful lives to support regulatory filings. The evaluation included several coal-fired plants, natural gas-fired simple and combined cycle units, and wind farms. Subsequent to the study, Jeff is available to provide written and oral testimony in Evergy's rate case hearing regarding the study findings.

Decommissioning Study / FPL Energy
Florida, Georgia / 2020

Project manager on a decommissioning study for the entire fleet of power generating facilities owned by FPL Energy and Gulf Power in the States of Florida and Georgia. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful lives to support regulatory filings. The evaluation included several coal-fired plants, natural gas-fired simple and combined cycle units, and solar generating facilities. Subsequent to the study, Jeff provided written testimony in FPL Energy's rate case hearing regarding the study findings.

Decommissioning Study / Xcel Energy
Colorado / 2020

Project manager on a decommissioning study for the entire fleet of power generating facilities owned by Xcel Energy in the State of Colorado. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful lives to support regulatory filings. The evaluation included several coal-fired plants, natural gas-fired simple and combined cycle units, and hydroelectric plants. Subsequent to the study, Jeff was available to provide written and oral testimony in Xcel Energy's rate hearing regarding the study findings.

Decommissioning Study / Apex Clean Energy

New York / 2019

Project manager on a decommissioning study for a wind farm being developed in New York. The evaluation was performed to determine the costs to demolish the units and restore the site at the end of its useful life to support Calpine's application to construct a major electric generating facility under Article 10 of the New York Public Service Law. Subsequent to the study, Jeff provided written testimony in the Article 10 public hearings regarding the study findings.

Decommissioning Study / Calpine

New York / 2019

Project manager on a decommissioning study for a wind farm being developed in New York. The evaluation was performed to determine the costs to demolish the units and restore the site at the end of its useful life to support Calpine's application to construct a major electric generating facility under Article 10 of the New York Public Service Law. Subsequent to the study, Jeff provided written testimony in the Article 10 public hearings regarding the study findings.

Decommissioning Study / Southwestern Public Service

Texas, New Mexico / 2018

Project manager on a decommissioning study for the entire fleet of power generating facilities owned by Southwestern Public Service. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful lives to support regulatory filings. The evaluation included coal-fired plants, natural gas-fired simple cycle units, and gas fired boiler projects. The report and results are being used in support of depreciation rates as part of the rate case filing. Jeff provided support through the regulatory process with written testimony in Southwestern Public Service's rate hearings regarding the study findings.

Decommissioning Study / Duke Energy

Indiana / 2018

Project manager on a decommissioning study for the entire fleet of power generating facilities owned by Duke Energy Indiana. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful lives to support regulatory filings. The evaluation included coal-fired plants, natural gas-fired simple and combined cycle units, solar projects, and a hydro-electric plant. Jeff provided support through the regulatory process with written testimony in Duke Energy Indiana's rate hearing regarding the study findings.

Decommissioning Study / Golden Valley Electric Association

Alaska / 2018

Project manager on a decommissioning study for the entire fleet of power generating facilities owned by Golden Valley Electric Association. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful lives to support regulatory filings. The evaluation included a coal-fired plant, diesel and naphtha fired combustion turbine units, a battery energy storage facility, and a wind farm. Jeff provided written testimony in Golden Valley's Compliance Hearing regarding the retirement of their Healy Unit 1 project. Jeff also provided written testimony in Golden Valley's rate hearing regarding the study findings.

Decommissioning Study / Owensboro Municipal Utilities

Kentucky / 2018

Project manager on a decommissioning study for coal fired generating facility owned by Owensboro Municipal Utilities. The evaluation was performed to determine the options for retiring the plant and associated costs. Options evaluated included placing one of the units into layup with the potential to restart at a later date, retirement in place, or full demolition and site restoration.

Decommissioning Study / Duke Energy

Florida / 2018

Project manager on a decommissioning study for the entire fleet of power generating facilities owned by Duke Energy Florida. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful lives to support regulatory filings. The evaluation included a coal-fired plant, natural gas-fired simple and combined cycle units, and solar projects. Subsequent to the study, Jeff provided written testimony in Duke Energy Florida's rate hearing regarding the study findings.

Decommissioning Study / Tucson Electric Power

Arizona / 2018

Project manager on a decommissioning study for the entire fleet of power generating facilities owned by Tucson Electric Power. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful lives to support regulatory filings. The evaluation included a coal-fired plant, natural gas-fired simple and combined cycle units, and solar projects. Subsequent to the study, Jeff was available to provide written and oral testimony in Tucson Electric Powers's rate hearing regarding the study findings.

Decommissioning Study / Public Service of New Mexico

New Mexico / 2018

Project manager on a decommissioning study for the entire fleet of power generating facilities owned by Duke Energy Florida. The evaluation is being performed to determine the costs to demolish the units and restore the sites at the end of their useful lives to support regulatory filings. The evaluation includes a coal-fired plant, natural gas-fired simple and combined cycle units, and solar projects.

Decommissioning Study / Capital Power

Illinois / 2018

Project manager on a decommissioning study for a wind farm being developed in Illinois. The evaluation was performed to determine the costs to demolish the units and restore the site at the end of its useful life to support the county zoning application. Subsequent to the study, Jeff will be available to provide written and oral testimony in the county zoning hearings regarding the study findings.

Decommissioning Study / Calpine

New York / 2018

Project manager on a decommissioning study for a wind farm being developed in New York. The evaluation was performed to determine the costs to demolish the units and restore the site at the end of its useful life to support Calpine's application to construct a major electric generating facility under Article 10 of the New York Public Service Law. Subsequent to the study, Jeff provided written and oral testimony in the Article 10 public hearings regarding the study findings.

Decommissioning Study / Tradewind Energy

Illinois / 2018

Project manager on a decommissioning study for a wind being developed in Illinois. The evaluation was performed to determine the costs to demolish the units and restore the site at the end of its useful life to support the county zoning application. Subsequent to the study, Jeff will be available to provided support for the county zoning hearings regarding the study findings.

Decommissioning Study / Hawaii Electric Company

Hawaii / 2018

Project manager on a decommissioning study for a reciprocating engine plant that was under construction for Hawaii Electric Company. The evaluation was performed to determine the costs to demolish the units and restore the site at the end of its useful life.

Decommissioning Study / EDP Renewables

Indiana / 2018

Project manager on a decommissioning study for a wind farm being developed in Indiana. The evaluation was performed to determine the costs to demolish the units and restore the site at the end of its useful life to support the county zoning application. Subsequent to the study, Jeff provided written and oral testimony in the county zoning hearings regarding the study findings.

Decommissioning Study / EDP Renewables

Illinois / 2018

Project manager on a decommissioning study for a wind farm being developed in Illinois. The evaluation was performed to determine the costs to demolish the units and restore the site at the end of its useful life to support the county zoning application. Subsequent to the study, Jeff provided oral testimony in the county zoning hearings regarding the study findings.

Due Diligence / Centerpoint Energy

Indiana / 2017

Project manager for a due diligence evaluation of Vectren's fleet of power plants being considered as part of a potential full acquisition of Vectren by Centerpoint. The evaluation included a technical, environmental, and contractual review of the coal, simple cycle, and wind farm facilities. As part of the project, Jeff presented the results of the study to CenterPoint's board of directors to support their decision making process for the acquisition.

Due Diligence / PKA AIP

Michigan / 2017

Project manager for a due diligence evaluation of a combined cycle power plant being considered for potential equity investment by PKA AIP. The evaluation included a technical, environmental, and contractual review of the plant.

Decommissioning Study / Tampa Electric Company

Florida / 2017

Project manager on a decommissioning study for the entire fleet of power generating facilities owned by Tampa Electric. The evaluation is being performed to determine the costs to demolish the units and restore the sites at the end of their useful lives to support regulatory filings. The evaluation includes a coal-fired plant, natural gas-fired simple and combined cycle units, and solar projects. Subsequent to the study, Jeff will be available to provide written and oral testimony in Tampa Electric's rate hearing regarding the study findings.

Decommissioning Asset Retirement Obligation Study / NRG Energy & Clearway Energy

Various US Locations / 2017 - 2020

Project manager on a decommissioning study to evaluate the asset retirement obligation costs for numerous renewable energy facilities owned by NRG Energy throughout the United States. The evaluation was performed to determine the costs for any obligations to remove and/or demolish the facilities and equipment and perform environmental remediation and site restoration activities. The study was performed to support compliance with FAS 143 requirements.

Due Diligence / Confidential Client

Northwest / 2017

Project manager for a due diligence evaluation of three natural gas fired combine cycle power plants being considered for potential acquisition. The evaluation included a technical, environmental, and contractual review of the facilities.

Decommissioning Study / Confidential Client

Illinois / 2017

Project manager for a site retirement evaluation to help determine the cost to retire a 600 MW coal-fired project in Illinois at the end of its useful life. Estimates for demolition and site restoration were included in the evaluation. Jeff previously prepared decommissioning study estimates for this plant with the updated study being performed to reflect current pricing and changes in regulations.

Decommissioning Study / AEP

Ohio, Indiana / 2017

Project manager on a decommissioning study for two coal fired power plants owned by Ohio Valley Electric Company and Indiana Kentucky Electric Company, both of which AEP is the largest shareholder. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful lives for purposes of accruing the costs over the life of the plants.

Decommissioning Study / OGE Energy Corp.

Oklahoma / 2017

Project manager on a decommissioning study for the entire fleet of power generating facilities owned by OGE Energy in Oklahoma. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful lives to support depreciation rates. The evaluation included several coal-fired plants, natural gas fired boilers, natural gas-fired simple and combined cycle units, and a wind farm. Subsequent to the study, Jeff provided written testimony, and is currently providing support in replying to discovery requests. Jeff will be available to provide oral testimony in OGE Energy's rate hearing regarding the study findings.

Decommissioning Study / Duke Energy

North Carolina, South Carolina, Kentucky / 2017

Project manager on a decommissioning study for the entire fleet of power generating facilities owned by Duke Energy Carolinas, Duke Energy Progress, and Duke Energy Kentucky. The evaluations were performed to determine the costs to demolish the units and restore the sites at the end of their useful lives to support regulatory filings. The evaluation included coal-fired planst, natural gas-fired simple and combined cycle units, gas fired boilers, hydro-electric plants, and solar projects. Subsequent to the study, Jeff provided written and oral testimony in Duke Energy rate hearings in North Carolina and Kentucky regarding the study findings.

Useful Life Assessment / Confidential Client

Southeast / 2017

Project manager on a useful life assessment for a combined cycle power plant for a confidential client. The evaluation was performed to determine the anticipated life of the facility and associated costs to achieve that life. The study supported financial modeling of the facility as part of the utility's portfolio of assets.

Useful Life Assessment / Confidential Client

Southeast / 2017

Project manager on a useful life assessment for a combined cycle power plant for a confidential client. The evaluation was performed to determine the anticipated life of the facility and associated costs to achieve that life. The study supported financial modeling of the facility as part of the utility's portfolio of assets.

Decommissioning Study / FPL Energy

Florida / 2015

Project manager on a decommissioning study for the entire fleet of power generating facilities owned by FPL Energy in the State of Florida. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful lives to support regulatory filings. The evaluation included several coal-fired plants, natural gas-fired simple and combined cycle units, solar generating facilities. Subsequent to the study, Jeff provided written and oral testimony in FPL Energy's rate case hearing regarding the study findings.

Decommissioning Study / Xcel Energy

Colorado / 2014

Project manager on a decommissioning study for the entire fleet of power generating facilities owned by Xcel Energy in the State of Colorado. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful lives to support regulatory filings. The evaluation included several coal-fired plants, natural gas-fired simple and combined cycle units, hydroelectric plants, and a wind farm. Subsequent to the study, Jeff is provided written and oral testimony in Xcel Energy's rate hearing regarding the study findings.

Decommissioning Cost Evaluation / Progress Energy Florida

Florida / 2008-2009

Project manager on a site retirement cost evaluation for all the fossil fuel-fired power generating facilities owned by Progress Energy in the state of Florida. The evaluation was performed to determine the costs to demolish the units and restore the sites and included a natural gas-fired steam plants, fuel oil-fired steam plants, natural gas-fired combustion turbines, coal-fired facilities, and combined cycle generating facilities. Subsequent to the study, Jeff provided direct testimony in Progress Energy Florida's rate case regarding the study findings.

Decommissioning Asset Retirement Obligation Study / NRG Energy

California / 2016

Project manager on a decommissioning study to evaluate the asset retirement obligation costs for all the fossil fuel-fired power generating facilities owned by NRG Energy in the state of California. The evaluation was performed to determine the costs for any legally obligations to demolish facilities and equipment and perform environmental remediation and site restoration activities. The facilities included a natural gas and fuel oil fired plants consisting of boilers, combustion turbines, and combined cycle generating facilities.

Due Diligence / Confidential Client

Northeast / 2016

Project manager for a due diligence evaluation of a portfolio of power generation assets. The assets included gas and oil fired boilers, combined cycle combustion turbines, and simple cycle combustion turbines. The client was considering acquiring an equity stake in the facilities. The evaluation included a technical, environmental, and contractual review of the facilities. The review primarily focused on evaluation of recent repairs to the facilities, remaining life of the equipment, and potential large capital cost requirements to identify key risks or fatal flaws.

Due Diligence / Confidential Client

Northeast / 2016

Project manager for a due diligence evaluation of a coal fired power generating facility that was being offered for sale. The client was considering acquiring an equity stake in the facility. The evaluation included a technical, environmental, and contractual review of the facilities. The review primarily focused on evaluation of the condition of the equipment and facilities, upgrades required to comply with environmental regulations, and other major capital or O&M projects to identify key risks or fatal flaws.

Due Diligence / Confidential Client

Northeast / 2016

Project manager for a due diligence evaluation of a combined cycle generating facility under development. The client was considering acquiring an equity stake in the facility. The evaluation included a technical, environmental, and contractual review of the natural gas fired generation facility. The review primarily focused on evaluation of the project costs, schedule, permitting, and other development activities to determine any development risks or fatal flaws.

Decommissioning Study / PacifiCorp

Oregon, Washington, Wyoming / 2016

Project manager on a decommissioning study for three wind farms owned by PacifiCorp. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful lives in support of determining depreciation rates.

Due Diligence / Confidential Client

Northeast / 2016

Project manager for a due diligence evaluation of a combined cycle generating facility under development. The client was considering acquiring an equity stake in the facility. The evaluation included a technical, environmental, and contractual review of the natural gas fired generation facility. The review primarily focused on evaluation of the project costs, schedule, permitting, EPC contract, equipment contracts, and other development activities to determine any development risks or fatal flaws.

Due Diligence / Confidential Client

Southeast / 2016

Project manager for a due diligence evaluation of a natural gas fired combined cycle power generating facility that was being offered for sale. The client was considering acquiring an equity stake in the facility. The evaluation included a technical, environmental, and contractual review of the facility. The review primarily focused on evaluation of the condition of the equipment, sufficiency of contractual arrangements, and environmental compliance to identify key risks or fatal flaws

Decommissioning Study / Big Rivers Electric Cooperative

Kentucky / 2016

Project manager on a decommissioning study for two coal-fired power generating facilities owned by Big Rivers Electric Cooperative. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful lives.

Due Diligence / Confidential Client

Northeast / 2016

Project manager for a due diligence evaluation of a natural gas fired combined cycle power generating facility that was being offered for sale. The client was considering acquiring an equity stake in the facility. The evaluation included a technical, environmental, and contractual review of the facility. The review primarily focused on evaluation of the condition of the equipment, sufficiency of contractual arrangements, design issues surrounding recent plant performance challenges, and environmental compliance to identify key risks or fatal flaws.

Useful Life Assessment / Confidential Client

Southeast / 2015

Project manager on a useful life assessment for a combined cycle power plant for a confidential client. The evaluation was performed to determine the anticipated life of the facility to support financing of the project associated with acquisition of the facility.

Decommissioning Study / Nebraska Public Power District

Nebraska / 2015

Project manager on a decommissioning study for five power generating facilities owned by Nebraska Public Power District. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful lives. The evaluation included two coal-fired plants, a natural gas-fired boiler plant, a combined cycle plant, and a wind farm.

Decommissioning Study / Lafayette Utilities System

Louisiana / 2015

Project manager on a decommissioning study for a coal fired generating facility in the state of Louisiana. The evaluation was performed to determine the costs for options to retire the units in place or demolish the units and restore the site now that the units are no longer operating. The costs are being used for planning purposes by the client, to determine the preferred decommissioning plan for the plant.

Decommissioning Study / Colstrip Energy

Montana / 2015

Project manager on a decommissioning study for a coal fired generating facility in the state of Montana. The evaluation was performed to determine the costs to demolish the unit and restore the site at the end of its useful life. The costs were used for planning purposes by the client, to determine the decommissioning funds that need to be accrued throughout the operating life of the facility.

Due Diligence / Confidential Client

Northeast / 2015

Project manager for a due diligence evaluation of a combined cycle generating facility under development. The client was considering acquiring an equity stake in the facility. The evaluation included a technical, environmental, and contractual review of the natural gas fired generation facility. The review primarily focused on evaluation of the project costs, schedule, permitting, and other development activities to determine whether the project was economically attractive and determine any development risks or fatal flaws.

Decommissioning Study / Apex Clean Energy

Various Locations / 2015

Project manager for a site retirement cost evaluation for three proposed wind energy facilities under development. The evaluation was performed to support permitting activities on the facilities.

Decommissioning Study / Oklahoma Gas & Electric

Oklahoma / 2014

Project manager on a decommissioning study for a power generating facility in the Midwest. The evaluation was performed to determine the costs to demolish the units and restore the site at the end of its useful life. The plant was expected to retire within a year or two of the study, and the costs were used for planning purposes by the client.

Decommissioning Study / Basin Electric Cooperative

North Dakota & Wyoming / 2014

Project manager on a decommissioning study for five power generating facilities in the North Dakota and Wyoming. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful life. The costs are being used for planning purposes by the client.

Coal Plant Layup / Hoosier Energy

Indiana / 2014

Project manager on the preparation of a plan to place a coal fired generating facility in long term layup reserve status. The project included preparation of three manuals for the implementation of the layup plan, maintaining the plant during the layup period, and reactivating the plant at the end of the layup period. .

Decommissioning Study / Apex Clean Energy

Illinois / 2014

Project manager for a site retirement cost evaluation for a proposed wind energy facility under development. The evaluation was performed to support permitting activities on the facility.

Decommissioning Study / Confidential Client

Midwest / 2014

Project manager for a due diligence evaluation of a combined cycle generating facility under development. The client was considering acquiring an equity stake in the facility. The evaluation included a technical, environmental, and contractual review of the natural gas fired generation facility. The review primarily focused on evaluation of the project costs, schedule, permitting, and other development activities to determine whether the project was economically attractive and determine any development risks or fatal flaws.

Due Diligence / Duke Energy

Florida / 2014

Project manager for a due diligence evaluation of the Osprey Energy Center combined cycle generating facility being offered for sale. Duke Energy was considering acquiring the facility from the current owner. The evaluation included a technical, environmental, and contractual review of the natural gas fired generation facility. Duke successfully acquired the facility and utilized the Independent Engineer's Report prepared by 1898 & Co. to support the regulatory process through acquisition of the facility.

Due Diligence / Confidential Client

Southeast / 2014

Project manager for a due diligence evaluation of a cogeneration facility being offered for sale. The client was considering acquiring the facility from the current owner. The evaluation included a technical, environmental, and contractual review of the natural gas fired generation facility, including a review of potential modifications to the facility due to the loss of the steam host and associated costs.

Due Diligence / Indiana Municipal Power Agency

Indiana / 2014

Project manager for a due diligence evaluation of a coal-fired generating facility being offered for sale. The client was considering acquiring the assets from the current owner. The evaluation includes a technical, environmental, and contractual review of the coal fired generation facility. .

Due Diligence / Kansas Municipal Power Agency

Missouri / 2014

Project manager for a due diligence evaluation of a combined cycle generating facility being offered for sale. The client was considering acquiring an equity stake in the facility. The evaluation included a technical, environmental, and contractual review of the natural gas fired generation facility.

Strategic Site Selection Study / Confidential Client

Midwest / 2013

Lead on site selection study for a new natural gas fired combined cycle generating resource in the Midwest. The study included evaluating greenfield and brownfield sites to determine the most attractive sites and the limiting factors to development at each site.

Strategic Site Selection Study / Confidential Client

Northeast / 2013

Lead on site selection study for a new gas processing facility in the northeast. The study included evaluating potential greenfield locations for a cryogenic gas processing plant to handle wet and dry gas from the Utica and Marcellus Shale areas.

Site Evaluations / Confidential Client

Southeast / 2013

Lead on the evaluation of three potential sites for a new natural gas fired combined cycle generating facility in the Southeast. The study included reviewing three sites previously selected by the client and ranking those sites relative to one another to determine their suitability for the natural gas-fired generation options under consideration. .

Decommissioning Study / Arizona Public Service

Arizona / 2013

Project manager on a decommissioning study for a four-steam electric generating facilities in the southwest. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful lives. The evaluation included two coal-fired plants, and two natural gas and fuel oil fired boilers.

Decommissioning Study / Confidential Client

Texas / 2013

Lead on a decommissioning study for a coal fired generating facility in Texas. The study included evaluating options to place the plant in reserve shutdown status or completely retire the plant and perform full plant demolition.

Decommissioning Study / Confidential Client

Upper Midwest / 2013

Project manager on a decommissioning study for a coal fired generating facility in the upper Midwest. The study included phasing the retirement dates of portions of the facility and performing selective demolition as appropriate with full demolition to be complete at the end of useful life of the entire facility. The study also included evaluating potential value of equipment for sale on the secondary market.

Decommissioning Study / Confidential Client

Ohio River Valley / 2013

Project manager on a decommissioning study for two coal fired generating facilities in the Ohio River Valley. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful life. The costs are being used for planning purposes by the client.

Decommissioning Study / EDP Renewables

Illinois / 2013

Project manager on a decommissioning study for a wind farm being developed in New York. The evaluation was performed to determine the costs to demolish the units and restore the site at the end of its useful life to support Calpine's application to construct a major electric generating facility under Article 10 of the New York Public Service Law. Subsequent to the study, Jeff will be available to provide written testimony in the Article 10 public hearings regarding the study findings.

Strategic Site Selection Study / Confidential Client

Western Kansas / 2012

Lead on a strategic site selection study for a new natural gas fired generation resource in the state of Kansas. The study resulted in the identification of multiple viable site alternatives to support the natural gas-fired generation options under consideration.

Due Diligence / Confidential Client

Northeast / 2012

Project manager for a due diligence evaluation of a coal-fired generating facility being offered for sale. The client was considering acquiring the assets from the current owner. The evaluation includes a technical, environmental, and contractual review of the coal fired generation facility.

Due Diligence / Old Dominion Electric Cooperative

Pennsylvania / 2012

Jeff provided support for a due diligence evaluation of a facility under development, that included a 2-on-1 combined cycle power block, being offered for sale. The client was considering acquiring the site from the current owner. The evaluation included a technical, environmental, and contractual review of the combined cycle generation facility. The evaluation included a review of existing agreements and permits in place to facilitate development of the generation resource. The project also included a review of the project capital costs to determine whether the costs were reasonable, and to identify any gaps that may increase the overall project cost.

Due Diligence / Old Dominion Electric Cooperative

New Jersey / 2012

Project manager for a due diligence evaluation of a facility that was under construction at the time, and was being offered for sale. The client was considering acquiring the 2-on-1 combined cycle power generating facility, from the current owner. The evaluation included a technical, environmental, and contractual review of the including a review of existing agreements and permits in place. The project also included a review of the project capital costs to determine whether the costs were reasonable, and to identify any gaps that may increase the overall project cost.

Due Diligence / Old Dominion Electric Cooperative

Virginia / 2012

Project manager for a due diligence evaluation of a facility under development, that included a 2-on-1 combined cycle power block, being offered for sale. The client was considering acquiring the site from the current owner. The evaluation included a technical, environmental, and contractual review of the combined cycle generation facility. The evaluation included a review of existing agreements and permits in place to facilitate development of the generation resource. The project also included a review of the project capital costs to determine whether the costs were reasonable, and to identify any gaps that may increase the overall project cost.

Due Diligence / Confidential Client

Southeast / 2012

Jeff assisted with a due diligence evaluation of a facility that includes two, 2-on-1 combined cycle power blocks, being offered for sale. The client was considering acquiring the assets from the current owner. The evaluation included a technical, environmental, and contractual review of the combined cycle generation facility.

Development Assistance / Tenaska

Ohio / 2012

Project manager assisting a client with the preparation of a Certificate of Environmental Compatibility and Public Need for conversion of an existing simple cycle facility to combined cycle. The facility includes five combustion turbines, four of which will be converted to two, 2-on-1 combined cycle power blocks. The project includes full preparation of the Certificate of Environmental Compatibility and Public Need application, as well as public meeting support.

Repower Assessment / Confidential Client

North Dakota / 2011

Jeff assisted a client with an evaluation comparing the economic viability of retrofitting an existing coal-fired power plant with air quality control system equipment in comparison to replacing the plant with new natural gas fired generation. The project includes preparing capital cost estimates; operating and maintenance cost estimates, and determining the net present value of each alternative evaluate the relative economic attractiveness of each alternative.

Decommissioning Study / Progress Energy

North Carolina & South Carolina / 2011

Project manager on a decommissioning study for the entire fleet of power generating facilities owned by Progress Energy Carolinas. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful lives. The evaluation included several coal-fired plants, as well as several natural gas-fired and fuel oil-fired units.

Decommissioning Study / Minnesota Power

Minnesota / 2011

Project manager on a decommissioning study for several power generating facilities owned by Minnesota Power. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful lives. The evaluation included three coal-fired plants and a biomass fired facility. .

Strategic Site Selection Study / Old Dominion Electric Cooperative

Virginia, Maryland, Pennsylvania, Delaware / 2011

Project manager on a strategic site selection study for a 750 MW combined cycle facility. The study resulted in the identification of multiple viable site alternatives to support the natural gas-fired generation option under consideration.

Due Diligence Evaluation / Old Dominion Electric Cooperative

Pennsylvania / 2011

Project manager on a due diligence evaluation of a 2-on-1 combined cycle facility being offered for sale by Liberty Electric in Pennsylvania. The client was considering acquiring the assets from the current owner. The evaluation included a technical, environmental, and contractual review of the combined cycle generation facility.

Due Diligence Evaluation / Tyr Energy

Florida / 2011

Project manager on a due diligence evaluation of a biomass power generating facility under development by American Renewables. The client was considering an equity investment in the facility. The evaluation included a 100 MW bubbling fluidized bed boiler and steam turbine.

Due Diligence Evaluation / Electric Cooperative

Maryland / 2011

Project manager on a due diligence evaluation of a combined cycle facility under development in Maryland. The client was considering acquiring the site and all the development rights for installation of a 2-on-1 combined cycle facility. The evaluation included a review of existing agreements and permits in place to facilitate development of the generation resource.

Decommissioning Study / Tampa Electric Co.

Florida / 2011

Project manager on a decommissioning study for the power generating facilities owned by Tampa Electric Company. The evaluation was performed to determine the costs to demolish the units and restore the sites at the end of their useful lives. The evaluation included a coal-fired plant, an integrated gasification combined cycle plant, and several natural gas-fired units.

Decommissioning Study / Confidential Client

Illinois / 2011

Project manager for a site retirement evaluation to help determine the cost to retire a 600 MW coal-fired project in Illinois at the end of its useful life. Estimates for demolition and site restoration were included in the evaluation.

Repower Assessment / Confidential Client

Minnesota / 2010

Jeff assisted a client with an evaluation comparing the economic viability of retrofitting an existing coal-fired power plant with air quality control system equipment in comparison to replacing the plant with new natural gas fired generation. The project includes preparing capital cost estimates; operating and maintenance cost estimates, and determining the net present value of each alternative evaluate the relative economic attractiveness of each alternative.

Biomass Plant Site Selection Study / Confidential Client

Texas / 2010

Project manager for a Site Selection Study for a Biomass project to be located in Texas. The project included ranking of candidate sites to determine a preferred site for development of a 20 MW biomass power generating facility.

Due Diligence Evaluation / Tyr Energy

Multiple Locations / 2010

Project manager on a due diligence evaluation for several natural gas-fired facilities being offered for sale by Tenaska. The client was considering an equity investment in the facilities. The evaluation included four combined cycle facilities and one simple cycle facility.

Power Plant Valuation Assessment / Basin Electric Power Cooperative

North Dakota / 2010

Project manager to provide a valuation assessment of the Antelope Valley Station Unit 2, which is being considered for purchase by Basin Electric Power Cooperative. The project includes valuing the 25 year old 450 MW coal fired unit in current dollars and at specified dates in the future.

Wind Farm Evaluation / Minnesota Power

North Dakota / 2010

Project manager to provide an evaluation of a proposed wind farm development in central North Dakota. The project includes wind resource assessments, conceptual engineering design, capital cost estimates, and estimated busbar costs for development of wind farm project in phases on the land currently under contract.

Decommissioning Cost Evaluations / Horizon Wind Energy

Midwest / 2008-2010

Project manager on multiple site retirement cost evaluations for several proposed wind energy facilities under development by Horizon Wind Energy. The evaluations were performed to support permitting activities on the facilities.

Due Diligence Evaluation / Tyr Energy

Hawaii / 2010

Project manager on a due diligence evaluation for a biomass gasification generating facility under development in Hawaii. The client was considering the facility for investment. The evaluation included a Primenergy gasifier with a net plant output of approximately 12 MW.

Project Development Assistance / Tradewind Energy

Kansas / 2009-2010

Project manager to provide development assistance on a wind farm facility in Southern Kansas. The development assistance includes support on land acquisition efforts for the project, transmission line routing and preliminary design, power collection system preliminary design, and general project development assistance.

Project Development Assistance / Tradewind Energy

Missouri / 2007-2010

Project manager to provide development assistance on two wind turbine facilities in Northern Missouri. The development assistance includes support on land acquisition efforts for the project, transmission line routing and preliminary design, power collection system preliminary design, and general project development assistance.

Decommissioning Cost Evaluation / Northern Indiana Public Service Co.

Indiana / 2008

Project manager on a site retirement cost evaluation for several generating facilities owned by NIPSCO. The evaluation was performed to determine the costs to demolish the units and restore the sites and included several coal-fired facilities and a combined cycle generating facility.

Due Diligence Evaluation / Grays Harbor Public Utility District

Washington / 2008

Project manager on a due diligence evaluation for a biomass-fired cogeneration facility being offered for sale in Washington. The facility evaluated was a paper mill that had been shutdown for several years. The facility included a wood waste fired boiler that provided steam to a steam turbine for electric power generation as well as providing plant process steam.

Due Diligence Evaluation / Tyr Energy

New Mexico / 2008

Project manager on a due diligence evaluation for a natural gas-fired power generating facility being offered for sale in New Mexico. The evaluation included two Mitsubishi 501F combustion turbines operating in combined cycle mode.

Decommissioning Cost Evaluation / Horizon Wind Energy

Illinois / 2008

Project manager on a site retirement cost evaluation for a wind farm being proposed by Horizon Wind Energy in Illinois. The evaluation was performed to determine the costs to demolish the units and restore the sites to meet the county zoning requirements.

Due Diligence Evaluation / Tyr Energy

Western U.S. / 2008

Project manager on a due diligence evaluation for several natural gas-fired power generating facilities being offered for sale throughout the western United States. The evaluation included several GE LM6000 combustion turbines operating in simple cycle mode, several GE LM6000 combustion turbines operating in combined cycle mode, one GE 7EA combustion turbine operating in combined cycle mode, and one GE 7FA combustion turbine operating in simple cycle mode.

Due Diligence Evaluation / Tyr Energy

Virginia / 2007

Project manager on a due diligence evaluation for a generating facility being offered for sale in Virginia. The evaluation included 7 GE LM6000 fuel oil fired combustion turbines operating in simple cycle mode.

Due Diligence Evaluation / Tyr Energy

Colorado / 2007

Project manager on a due diligence evaluation for 5 GE LM6000 combustion turbines operating in combined cycle cogeneration mode with 2 steam turbines. The facility includes a greenhouse that serves as the plant's thermal host for cogeneration operations.

Project Development Assistance / Mesa Wind Power

Texas / 2007

Jeff provided development assistance on a 4,000 MW wind turbine facility located in the panhandle of Texas. The development assistance includes pro forma economic modeling of the project.

Due Diligence Evaluation / Kelson Energy

Ohio / 2007

Project manager on a due diligence evaluation for a generating facility being offered for sale in Ohio. The evaluation included a partially constructed 2x1 Siemens Westinghouse 7FA combined cycle generating facility.

Due Diligence Evaluation / Grand River Dam Authority

Oklahoma / 2007

Project manager on a due diligence evaluation for a generating facility being offered for sale in Oklahoma. The evaluation included a 4x2 GE 7FA combined cycle generating facility.

Due Diligence Evaluation / Brazos Electric Power Cooperative

Texas / 2007

Project manager on a due diligence evaluation for the purchase of an equity share of a generating facility being constructed in Texas. The evaluation included an 890 MW supercritical pulverized coal fired generating facility.

Due Diligence Evaluation / Tyr Energy

Florida / 2007

Project manager on a due diligence evaluation for a generating facility being offered for sale in Florida. The evaluation included 3 GE 7FA combustion turbines operating in simple cycle mode. .

Cost Estimate Preparation / Direct Energy

Texas / 2007

Project manager for the preparation of planning level cost estimates for a new combined cycle facility to be constructed in Texas.

Due Diligence Evaluation / Tyr Energy

Various U.S Locations / 2007

Project manager on a due diligence evaluation for several generating facilities being offered for sale throughout the U.S. The evaluation included a coal, natural gas, and wind power facilities.

Owner's Engineer Services / Grays Harbor PUD

Washington / 2007

Project manager on an owner's engineer project to evaluate the plans for installation of a refurbished steam turbine at a paper mill. The evaluation included the review of the design for the installation of a 7 MW steam turbine.

Decommissioning Cost Evaluation / Tyr Energy

Various U.S Locations / 2007

Project manager on a site retirement cost evaluation for several generating facilities owned by Tyr Energy. The evaluation was performed to satisfy FASB 143 accounting standards and included a simple cycle and combined cycle generating facilities.

Due Diligence Evaluation / Tyr Energy

Virginia / 2006-2007

Project manager on a due diligence evaluation for a generating facility being offered for sale in Virginia. The evaluation included a 240 MW subcritical pulverized coal fired facility.

Due Diligence Evaluation / Brazos Electric Power Cooperative

Texas / 2006

Project manager on a due diligence evaluation for a generating facility being offered for sale in Texas. The evaluation included a 1x1 GE 7FA combined cycle generating facility and 2 GE 7FA combustion turbines operating in simple cycle mode.

Due Diligence Evaluation / Kelson Energy

Ohio / 2007

Project manager on a due diligence evaluation for a generating facility being offered for sale in Ohio. The evaluation included a partially constructed 2x1 Siemens Westinghouse 7FA combined cycle generating facility.

Generation Alternatives Study / Ottertail Power Company

North Dakota / 2006

Project manager on a Generation Alternatives Study for the addition of a new 600 MW coal fired unit at an existing coal fired facility. The study includes a pro forma analysis of the technologies considered.

Technology Assessment / Minnesota Power

South Dakota / 2006

Assisted with a technology assessment for the addition of a new 500 MW coal fired unit at an existing coal fired facility. The study includes a pro forma analysis of the technologies considered.

Technology Assessment & Feasibility Study / Ottertail Power Co.

Minnesota / 2006

Project manager on a feasibility study and technology assessment for the addition of a new 500 MW coal fired unit at an existing coal fired facility. The study includes conceptual site layouts, cost estimates, performance estimates, and water balances.

Project Development Assistance / Tradewind Energy

Kansas / 2005-2006

Project manager to provide development assistance on a 250MW wind turbine facility in Central Kansas. The development assistance includes conceptual design and technical support for the development phase of the project.

Siting Study & Technology Assessment / Arizona Public Service

Arizona/New Mexico / 2005-2006

Assisted with a siting study and technology assessment for a 1,800 MW coal fired facility in Arizona and Northwestern New Mexico. Development resulted in the identification of multiple viable site alternatives to support coal-fired generation options.

Due Diligence Evaluation / Tyr Energy

California / 2005-2006

Project manager on a due diligence evaluation for four generating facilities being offered for sale in California. The evaluation included simple cycle facilities consisting of Pratt & Whitney FT8 Twinpacs. Professional Services: 2005-2006

Waste-to-Energy Feasibility Study / CPS Energy

Texas / 2005

Assisted with a feasibility study for a new waste-to-energy facility in the State of Texas. The study included a pro forma analysis of the facility considered.

Due Diligence Evaluation / Tyr Energy

Oklahoma / 2006

Project manager on a due diligence evaluation for a generating facility being offered for sale in Oklahoma. The evaluation included a simple cycle facility consisting of four General Electric 7EA turbines.

Due Diligence Evaluation / Cinergy

Indiana / 2005

Project manager on a due diligence evaluation for a generating facility being offered for sale in Indiana. The evaluation included a simple cycle facility consisting of four Siemens Westinghouse 501D5A turbines.

Due Diligence Evaluation / kRoad Power

Various Locations / 2003-2004

Project manager on due diligence evaluations for several generating facilities being offered for sale throughout the United States. The evaluations included four combined cycle plants utilizing Siemens Westinghouse 501G turbines.

Due Diligence Evaluation / kRoad Power

Various Locations / 2003

Project manager on due diligence evaluations for several generating facilities being offered for sale by Duke Energy. The evaluations included two combined cycle plants and one simple cycle plant utilizing General Electric 7FA turbines and General Electric 7EA turbines respectively.

Decommissioning Cost Evaluation / Old Dominion Electric Cooperative

Maryland/Virginia / 2002-2004

Project manager on several site retirement evaluations to help determine the cost to retire the facilities at the end of their useful life. The evaluations included simple cycle plants utilizing General Electric 7FA turbines and Caterpillar

Diesel Gensets. Estimates for demolition and site restoration were included.

Decommissioning Cost Evaluation / Western Farmers Electric Cooperative

Oklahoma / 2004

Project manager on a site retirement evaluation to determine the approximate cost to retire the facilities, prepare demolition contract documents, and evaluate bids. The evaluation included a duel fuel genset site.

Decommissioning Cost Evaluation / Panda Energy

North Carolina / 2003

Project manager on a site retirement evaluation to help determine the cost to retire the Panda-Rosemary Project at the end of its useful life. The evaluation included a combined cycle cogeneration facility in Roanoke Rapids, North Carolina. Estimates for demolition and site restoration were included in the evaluation.

Independent Engineer's Report / Panda Energy

North Carolina / 2003-2004

Produced an Independent Engineer's Report for the Panda-Rosemary Project. The report included a due diligence evaluation of plant performance and financial assessment of a combined cycle cogeneration facility in Roanoke Rapids, North Carolina.

Decommissioning Cost Evaluation / Sempra Energy

Arizona / 2003

Provided a site retirement evaluation to help determine the cost to retire the Mesquite Energy Generating Facility at the end of its useful life. The evaluation included a combined cycle plant near Phoenix, Arizona. Estimates for demolition and site restoration were included in the evaluation.

Feasibility Study / Northeast Utility Service Corp

New Hampshire / 2004

Assisted with a feasibility study to replace an existing coal-fired unit with a new coal fired unit. The study included the installation of a single 600 MW unit in New Hampshire. A pro forma analysis of the new unit was prepared and benchmarked against a pro forma analysis for the existing unit.

Technology Assessment & Feasibility Study / Ottertail Power Corp

South Dakota / 2006

Assisted with a technology assessment and feasibility study for a new coal-fired generation facility in South Dakota. The study included a pro forma analysis of the alternative technologies considered.

Waste-to-Energy Feasibility Study / CPS Energy

Texas / 2005

Assisted with a feasibility study for a new waste-to-energy facility in the State of Texas. The study included a pro forma analysis of the facility considered.

Technology Assessment & Feasibility Study / Progress Energy

Florida / 2004

Assisted with a technology assessment and feasibility study for new solid fuel fired generation in the State of Florida. The study included a pro forma analysis of the alternative technologies considered.

Resources Corporation Project Development Assistance / Peoples Energy

Oregon / 2001-2004

Provided project development assistance for a 1,200 MW combined cycle power plant in Oregon. Mr. Kopp assisted in the preparation of an Energy Facility Site Certificate including preliminary engineering design, preparation and review of written exhibits, and public presentation support.

Project Development Assistance / Peoples Energy Resources Corporation

New Mexico / 2001-2004

Provided project development assistance for a simple cycle power plant in New Mexico. Mr. Kopp provided preliminary engineering design and project development assistance. This included preparing preliminary site design drawings that were approved by the county zoning commission during the site design review process as well as public presentation support.