BEFORE THE CORPORATION COMMISSION OF OKLAHOMA

IN THE MATTER OF THE APPLICATION OF OKLAHOMA GAS AND ELECTRIC COMPANY FOR AN ORDER OF THE COMMISSION AUTHORIZING APPLICANT TO MODIFY ITS RATES, CHARGES, AND TARIFFS FOR RETAIL ELECTRIC SERVICE IN OKLAHOMA	))))))	CAUSE NO. PUD 201700496

Direct Testimony
of

Jeffrey T. Kopp

Manager, Business Consulting for Burns and McDonnell

on behalf of

Oklahoma Gas and Electric Company

January 16, 2018

Q. **Please state your name and address.**

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

Q. **Please briefly describe your educational background and certifications.**

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 Masters of Business Administration from the University of Kansas. I am a registered Professional Engineer in the states of Missouri and Illinois.

Q. **By whom are you employed and in what capacity?**

A. I am employed by Burns & McDonnell Engineering Company, Inc. (BMcD) as a manager in the Business Consulting Department of the Business & Technology Services Division. BMcD has been in business since 1898, serving multiple industries, including the electric power industry. In 2017, BMcD was rated No. 16 overall of the Top 500 Design Firms by the Engineering News Record (ENR). BMcD was rated as the No. 1 engineering design firm in the United States serving the electric power industry by ENR in 2017.

BMcD has vast experience in preparation of decommissioning studies, overseeing demolition projects, and executing construction projects, including hundreds of construction projects totaling more than $1 billion dollars of construction last year alone. In order to execute over $1 billion dollars of construction projects on an annual basis, BMcD has to win this work through competitive bidding processes, which requires us to be able to accurately prepare cost estimates.

Our long history, large market presence, and top industry rankings demonstrate our ability to effectively and accurately estimate costs. In addition, we have seen competitive bids from demolition contractors for power plant demolition projects, and we have worked with demolition contractors over the years to refine our estimating process for decommissioning studies to align our costs with theirs.

Q. **Please briefly describe your experience and duties at Burns & McDonnell.**

A. I am a professional engineer with 16 years of experience consulting to electric utilities. 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.

As a manager in the Business Consulting Department of BMcD, I oversee a team of 12 project managers who provide consulting services to clients primarily in the electric power generation and electric power transmission industries, but also to other industrial and commercial clients. The services provided by this group of project managers include decommissioning cost studies, independent engineering assessments of existing power generation assets, economic evaluations of capital expenditures, new power generation development and evaluation, electric and water rate analysis, electric transmission planning, generation resource planning, renewable power development, and other related engineering and economic assessments.

Q. **On whose behalf are you testifying in this case?**

A. I am testifying on behalf of Oklahoma Gas and Electric Company ("OG&E" or the "Company").

Q. **Have you previously testified before this Commission or any other Commissions?**

A. I have not previously testified before this Commission. However, I have provided testimony regarding power plant decommissioning costs as part of development of depreciation rates to the following Commissions.

- Florida Public Service Commission
- Public Utilities Commission of the State of Colorado
- Kentucky Public Service Commission
- North Carolina Utilities Commission

Q. **What is the purpose of your testimony in this proceeding?**

A. The purpose of my testimony is to describe and support the Company's Fleet Decommissioning Cost Estimate Study ("Decommissioning Study") prepared for all of the power generating facilities owned by the Company in Oklahoma, (collectively the Plants).

Q. **Please identify the Decommissioning Study you performed for OG&E.**

A. The study is a report entitled, "Fleet Decommissioning Cost Estimate Study," dated May 22, 2017. This report sets forth the results of my Decommissioning Study for OG&E, and is attached herein as Direct Exhibit JTK-1.

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

A. I served as the BMcD project manager 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 decommissioning assumptions, decommissioning estimating methodology, preparation and review of the estimates, and preparation and review of the report.

Q. **Is Direct Exhibit JTK-1 a true and accurate copy of your Decommissioning Study?**

A. Yes.

Q. **Does Direct Exhibit JTK-1 accurately portray the results of your Decommissioning Study as of May 22, 2017?**

A. Yes.

Q. **What was the purpose of your Decommissioning Study?**

A. The Company retained BMcD to provide it with a recommendation regarding the total cost, in 2017 dollars, of decommissioning each Company-owned generation unit at the end of its useful life as well as the total cost of decommissioning the common facilities at these

generating plants. The total decommissioning cost as determined by BMcD and reflected in the Decommissioning Study was net of salvage value for scrap materials at each plant.

Q. **What plants did BMcD evaluate in the Decommissioning Study?**

A. For purposes of the Decommissioning Study, we evaluated all of the generating facilities owned by the Company in Oklahoma, which includes the following:

- Centennial Wind Farm
- Crossroads Wind Farm
- Horseshoe Lake Plant
- McClain Power Plant
- Muskogee Power Plant
- Mustang Power Plant
- Mustang Solar Site
- OU Spirit Wind Farm
- Redbud Power Plant
- Seminole Power Plant
- Sooner Power Plant
- Tinker Air Force Base

Q. **What level of decommissioning and demolition was assumed to be performed at each of the sites?**

A. The basis of the estimates was that all sites will be restored to a condition suitable for industrial use. The sites will have all above grade buildings and equipment removed, foundations removed to three feet below grade, be rough graded, and seeded. Sites also will have small diameter underground pipes capped and abandoned in place. The sites can remain in this condition in perpetuity, until the site is specifically redeveloped for industrial use.

Q. **Did you visit each of the sites included in the Study?**

A. Yes. I conducted onsite assessments of all locations for which decommissioning cost estimates were prepared, along with other individuals from BMcD, and representatives from the Company.

Q. **What approach was used to develop the decommissioning estimates in the Decommissioning Study?**

A. The estimate of direct decommissioning costs was prepared with the intent of most accurately representing what BMcD would anticipate contractors bidding to demolish the equipment, address environmental issues, and restore the site to a condition suitable for industrial use through a competitive bidding process, based on performing known decommissioning tasks, within the set of assumptions outlined in the Fleet Decommissioning Cost Estimate Study, under ideal conditions. In addition to these direct costs, indirect costs are added to cover cost incurred by the Company in executing the projects, and contingency is added to account for unknown, but reasonably expected to be incurred costs.

Q. **How were the direct costs developed for purposes of the Decommissioning Study?**

A. Direct costs are the estimated costs that contractors would bid to demolish the equipment, address environmental issues, and restore the site to a condition suitable for industrial use. As part of the Decommissioning Study, 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 brass, copper, aluminum, and stainless steel; tons of debris; cubic yards of concrete; linear feet of asbestos pipe insulation; square feet of asbestos boiler insulation; cubic yards of site grading; acres of seeding; acres of pond capping; and the labor hours required to complete the decommissioning and demolition activities.

BMcD estimated quantities based on a visual inspection of the facilities, review of engineering drawings, BMcD's in-house database of plant quantities, and BMcD's professional judgment. This resulted in an estimate of quantities for the tasks required to be

performed for each decommissioning effort. 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 cost of decommissioning for each site. Additionally, unit pricing for scrap values was applied to the scrap quantities to determine anticipated salvage values, which were subtracted from the direct costs for demolition in order to arrive at a total net project cost in 2017 dollars.

Q. **How were scrap values calculated?**

A. In the study, certain above grade equipment and metal structures were assumed to have scrap value. Scrap metal prices used in the development of the scrap credit were based on a review of recent pricing trends for various types of materials published by American Metal Market, which is an industry standard publication and information subscription service (see http://www.amm.com) that reports the prices paid for scrap metals in transactions worldwide.

American Metal Market 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. American Metal Market also has extensive experience in reporting scrap prices in a wide range of grades and locations. American Metal Market has been reporting on the U.S. scrap market for more than 100 years, providing benchmark prices to users in the scrap metal industry.

Q. **What is included in the project indirect costs included in the Decommissioning Study?**

A. Indirect costs include those costs expected to be incurred by the Company during the decommissioning process, which would be in addition to the direct costs paid to demolition contractors. This includes the internal administrative costs (e.g., permitting, fees, Company 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. The percentage of direct costs that was applied to determine the indirect costs was developed by BMcD based on experience with recent decommissioning estimates.

Q. **What is included in the contingency costs?**

A. A contingency cost includes unspecified but reasonably expected additional costs to be incurred by the Company during the execution of decommissioning and demolition activities. For decommissioning projects, there is some uncertainty associated with work conditions, the scope of work and how the work will be performed. There also is some uncertainty associated with estimating the quantities for decommissioning of facilities. These uncertainties result from the age and limits on drawings available, as well as 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 standard industry practice?**

A. Yes. The application of contingency is not only appropriate, but also standard industry practice. Even on a project where firm pricing has been agreed upon with a successful bidder, it is typical that a client carry some level of contingency to cover potential change orders. It is even more important to carry contingency on planning level cost estimates such as those presented in the Decommissioning Study.

Q. **In your opinion, are the decommissioning costs set forth in Direct Exhibit JTK-1 the appropriate costs for the Oklahoma Commission to adopt in this proceeding for OG&E?**

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

Q. **Does this conclude your direct testimony?**

A. Yes.

Fleet Decommissioning Cost Estimate Study

Oklahoma Gas & Electric

Fleet Decommissioning Cost Estimate Study
Project No. 95525

5/22/2017

Fleet Decommissioning Cost Estimate Study

prepared for

Oklahoma Gas & Electric
Fleet Decommissioning Cost Estimate Study
Oklahoma City, Oklahoma

Project No. 95525

5/22/2017

prepared by

Burns & McDonnell Engineering Company, Inc.
Kansas City, Missouri

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LIST OF ABBREVIATIONS

Abbreviation	Term/Phrase/Name
Burns & McDonnell	Burns & McDonnell Engineering Company, Inc.
BOP	Balance of Plant Facilities
C&D	Construction and Demolition
CCGT	Combined Cycle Gas Turbine
COD	Commercial Operating Date
CT	Combustion Turbine
GE	General Electric
GSU	Generator Step-up
MW	Megawatt
OGE	Oklahoma Gas & Electric
PCB	Polychlorinated Biphenyl
Plants	Power Generation Assets
ST	Steam Turbine
STG	Steam Turbine Generator
Study	Decommissioning Cost Study
TSCA	Toxic Substances and Control Act

1.0 EXECUTIVE SUMMARY

1.1 Introduction

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

1.2 Results

Burns & McDonnell has prepared cost estimates in 2017 dollars for the decommissioning of the Plants. These cost estimates are summarized in Table 1-1. When OGE 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. OGE 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 (2017$)

Plant	Decommissioning Costs	Credits	Net Project Cost
Centennial Wind Farm	$8,319,000	$(6,049,000)	$2,270,000
Crossroads Wind Farm	$11,458,000	$(9,141,000)	$2,317,000
Horseshoe Lake Plant	$24,075,000	$(9,839,000)	$14,236,000
McClain Power Plant	$8,936,000	$(3,295,000)	$5,641,000
Muskogee Power Plant	$60,569,000	$(19,157,000)	$41,412,000
Mustang Power Plant	$28,126,000	$(8,248,000)	$19,878,000
Mustang SCGT	$4,294,000	$(2,501,000)	$1,793,000
Mustang Solar Site	$282,000	$(161,000)	$121,000
OU Spirit Wind Farm	$5,145,000	$(4,170,000)	$975,000
Redbud Power Plant	$18,688,000	$(8,297,000)	$10,391,000
Seminole Power Plant	$42,414,000	$(12,907,000)	$29,507,000
Sooner Power Plant	$50,269,000	$(17,348,000)	$32,921,000
Tinker Air Force Base	$986,000	$(513,000)	$473,000
Fleet Total	**$263,561,000**	**($101,626,000)**	**$161,935,000**

The total net project costs presented above include the costs to return the sites to an industrial condition suitable for reuse for development of an industrial facility. Included are the costs to dismantle the power

generating equipment owned by OGE as well as the costs to dismantle the OGE-owned Balance of Plant facilities ("BOP") and environmental site restoration activities.

1.2.1 Statement of Limitations

In preparation of this decommissioning study, Burns & McDonnell has relied upon information provided by OGE. Burns & McDonnell acknowledges that it has requested the information from OGE that it deemed necessary to complete this study. Burns & McDonnell has not independently verified such information and cannot guarantee its accuracy or completeness.

Burns & McDonnell's estimates and projections of decommissioning costs are based on Burns & McDonnell's experience, qualifications, and judgment. Since Burns & McDonnell has no control over weather, cost and availability of labor, material and equipment, labor productivity, construction contractors' procedures and methods, and other factors, Burns & McDonnell does not guarantee the accuracy of its estimates and projections.

Burns & McDonnell's estimates do not include allowances for unforeseen environmental liabilities associated with unexpected environmental contamination due to events not considered part of normal operations, such as fuel tank ruptures, oil spills, etc. Estimates also do not include allowances for environmental remediation associated with changes in classification of hazardous materials.

2.0 INTRODUCTION

2.1 Background

Burns & McDonnell was retained by OGE to conduct a Study for Plants in Oklahoma to estimate the decommissioning costs. The assets include natural gas-fired, coal-fired, solar, and wind generating facilities. Individuals from Burns & McDonnell visited the 11 Plants evaluated within the Study in March of 2017. The purpose of the Study was to review the facilities and to make a recommendation to OGE regarding the total cost to decommission the facilities at the end of their useful lives.

Burns & McDonnell has prepared decommissioning studies for over 100 facilities on various types of fossil fuel and renewables power plants using a proven approach to developing these estimates. In addition to preparing decommissioning estimates, Burns & McDonnell has supported demolition projects as the owner's engineer, to evaluate demolition bids and oversee demolition activities. This has provided Burns & McDonnell with insight into the range of competitive demolition bids, which also assists in confirming the reasonableness of the decommissioning estimates developed by Burns & McDonnell.

2.2 Study Methodology

The site decommissioning costs were developed using information provided by OGE and in-house data Burns & McDonnell has collected from previous project experience. Burns & McDonnell estimated quantities for equipment based on a visual inspection of the facilities, review of engineering drawings, Burns & McDonnell's in-house database of plant equipment quantities, and Burns & McDonnell's professional judgment. This resulted in an estimate of quantities for the tasks required to be performed for each decommissioning effort. Current market pricing for labor rates, equipment, and unit pricing were 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 for each site.

The decommissioning costs include the cost to return the site to an industrial condition, suitable for reuse for development of an industrial facility, commonly referred to as a brownfield site. Included are the costs to decommission all of the assets owned by OGE at the site, including power generating equipment and BOP facilities.

2.2.1 Site Visits

Representatives from Burns & McDonnell and OGE visited the sites. The site visits consisted of a tour of each facility with plant personnel to review the equipment installed at each site. Tours were conducted by plant personnel.

Mr. Suraj Balan, from Oklahoma Gas & Electric, served as the OGE representative throughout the site visits, along with plant personnel at each of the sites.

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

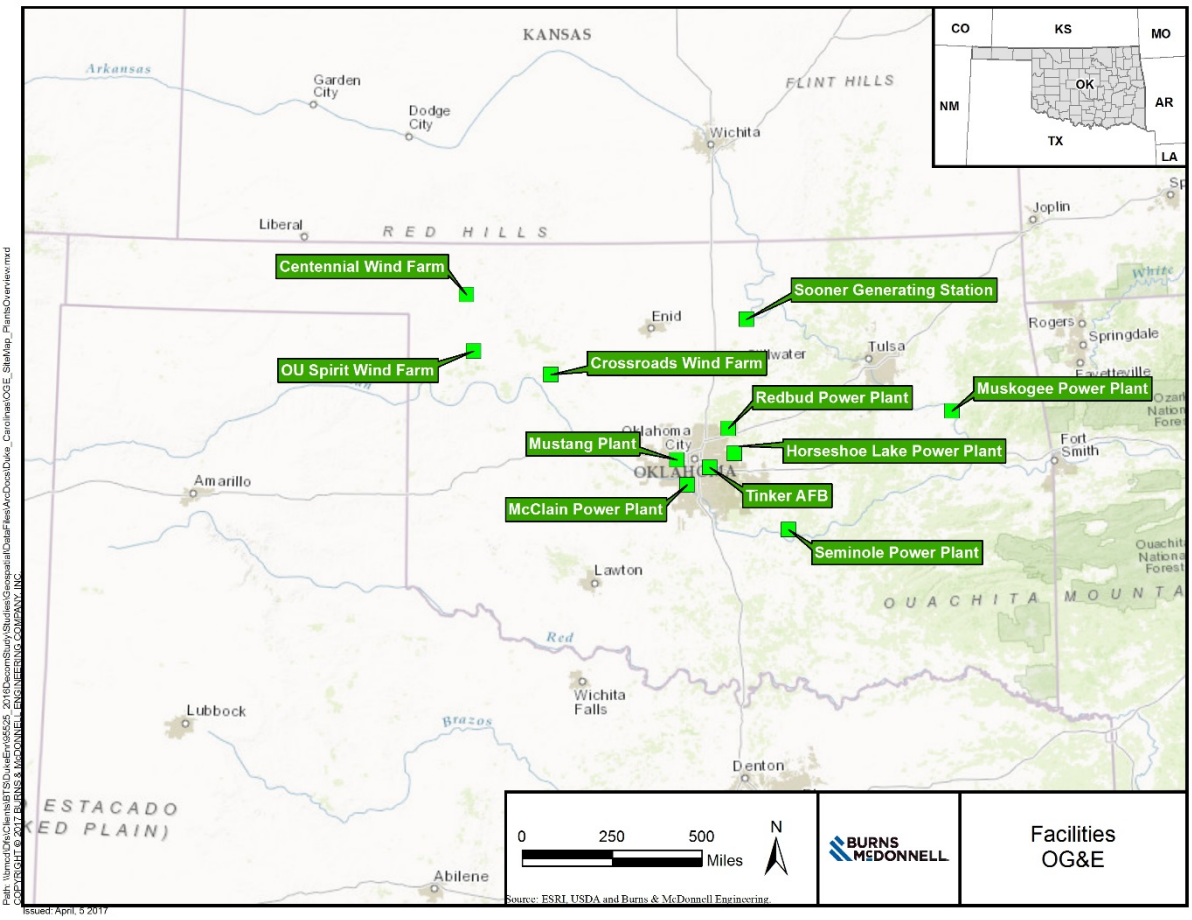
- Mr. Jeff Kopp, Project Manager
- Mr. Tommy Bertken, Project Consultant
- Ms. Beth Wiese, Project Consultant
- Mr. Chris Dowdell, Demolition Specialist

Table 2-1 presents the dates in which the site visits were performed. Figure 2-1 presents a map illustrating the location of the OGE facilities evaluated within this Study.

Table 2-1: Site Visit Dates

Plant	Site Visit Date
Centennial Wind Farm	March 6, 2017
Crossroads Wind Farm	March 6, 2017
Horseshoe Lake Plant	March 7, 2017
McClain Power Plant	March 7, 2017
Muskogee Power Plant	March 8, 2017
Mustang Power Plant & Solar Site	March 7, 2017
OU Spirit Wind Farm	March 6, 2017
Redbud Power Plant	March 9, 2017
Seminole Power Plant	March 8, 2017
Sooner Power Plant	March 9, 2017
Tinker Air Force Base Power Plant	March 7, 2017

Figure 2-1: OGE Facilities



3.0 PLANT DESCRIPTIONS

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

3.1 Centennial Wind Farm

Centennial Wind Farm is located north of Fort Supply, Oklahoma, and contains 80 individual 1.5 megawatt ("MW") SLE General Electric ("GE") wind turbines that have a total capacity of 120 MW. The turbines have a hub height of 80 meters and a rotor length of 80 meters. Centennial Wind Farm began commercial operation in 2007.

3.2 Crossroads Wind Farm

Crossroads Wind Farm is located southeast of Seiling, Oklahoma, and contains 95 individual wind turbines consisting of the 2.3 MW Siemens technology, and 3 wind turbines consisting of the 3.0 MW Siemens technology that have a combined total capacity of 227 MW. Both the 2.3 MW Siemens turbines and the 3.0 MW Siemens turbines have a hub height of 80 meters and a rotor length of 101 meters. Crossroads Wind Farm began commercial operation in 2012.

3.3 Horseshoe Lake Plant

Horseshoe Lake Plant is located north of Harrah, Oklahoma, and is adjacent to Horseshoe Lake. The plant is made up of five units, Units 6 through 10. Units 6 through 8 used to be coal-fired boilers but have since been converted to natural gas-fired boilers. Unit 6, Unit 7, and Unit 8 have capacities of 163 MW, 213 MW, and 443 MW, respectively. Units 9 and 10 are combustion turbines ("CT") and each have a capacity of 60 MW. The total plant capacity is 939 MW. The plant uses once through cooling from Horseshoe Lake for Units 6 through 8, along with a helper cooling tower.

3.4 McClain Plant

McClain Energy Facility is located north of Newcastle, Oklahoma, and has a total plant capacity of 538 MW. The plant consists of a 2x1 combined cycle gas turbine ("CCGT") unit that began commercial operation in 2001. CT 1 and 2 are identical and each have a capacity of 176 MW, which are paired with the steam turbine that has a capacity rating of 198 MW. McClain Energy Facility is jointly owned by OG&E and OMPA. The estimate provided in the study is for the total plant, not solely OG&E ownership.

3.5 Muskogee Power Plant

Muskogee Generating Station is comprised of three coal-fired units of identical size; Unit 4, Unit 5, and Unit 6. Each unit has a capacity of 550 MW, totaling a 1,650 MW capacity for the entire plant. Muskogee Generating Station is located in Muskogee, Oklahoma, south of Fort Gibson and is adjacent to the

Arkansas River. Muskogee has precipitators installed for particulate matter control on all three units, but no other air emissions controls are currently installed. Unit 4 and Unit 5 are proposed to be converted to natural gas with a commercial operation date of 2018.

3.6 Mustang Power Plant

The Mustang Plant is a natural gas-fired generation facility located in Oklahoma City, Oklahoma. The facility is comprised of four boiler and steam turbine units, which are currently in operation. The four units were brought online in 1950, 1951, 1955, and 1959. Unit 1 and Unit 2 are each rated at 50 MW, with Unit 3 and Unit 4 rated at 109 MW and 250 MW, respectively. Unit 1 and Unit 2 were originally designed to burn coal, but were later converted to burn natural gas. Unit 3 and Unit 4 have only burned natural gas. None of the units have any emissions control equipment.

3.7 Mustang Solar Site

The Mustang Solar Site is located in Oklahoma City, Oklahoma, north of the Mustang CT and natural gas units. It has an estimated 10,000 panels on-site at a capacity rating of 2.5 MW. It began commercial operation in 2015.

3.8 OU Spirit Wind Farm

OU Spirit Wind Farm is located southwest of Sharon, Oklahoma, and contains 44 SWT-2.3 Siemens wind turbines that have a total capacity of 101.2 MW. The turbines have a hub height of 80 meters and a rotor length of 93 meters. OU Spirit Wind Farm began commercial operation in 2009.

3.9 Redbud Power Plant

Redbud Power Plant is located northwest of Luther, Oklahoma, and went into operation in 2003. Redbud contains four identical 1x1 CCGT units that have a capacity of 358 MW, for a combined total plant output of 1,434 MW. Redbud Power Plant is jointly owned by OG&E, GRDA, and OMPA. The estimate provided in the study is for the total plant, not solely OG&E ownership.

3.10 Seminole Power Plant

Seminole Power Plant is located northeast of Konawa, Oklahoma, and is adjacent to Lake Konawa. Seminole contains three natural gas-fired steam turbines with a total capacity of 1,500 MW. All three units are identical in size, each with a capacity of 500 MW. Unit 1, Unit 2, and Unit 3 began commercial operation in 1971, 1973, and 1975, respectively.

3.11 Sooner Power Plant

Sooner is a 1,060 MW plant consisting of two identical coal-fired units, each 530 MW. The plant is located a few miles west of Redrock, Oklahoma, and has been in operation since 1980. Cooling water is provided by Sooner Lake.

3.12 Tinker Air Force Base Power Plant

Tinker is located on Tinker Air Force Base southeast of Oklahoma City, Oklahoma. The plant consists of two identical FT-4 TwinPacs. The plant went into operation in 1972 and has a total capacity of 82 MW.

4.0 DECOMMISSIONING COSTS

Burns & McDonnell has prepared decommissioning cost estimates for the Plants. When OGE determines that each site 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 site decommissioning costs. However, OGE will incur costs of decommissioning of the Plants and restoration of the site to the extent that those costs exceed the scrap value of equipment and bulk steel.

The decommissioning 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 dismantle all of the assets owned by OGE at the sites, including power generating equipment and BOP facilities, as well as environmental site restoration activities.

For purposes of this Study, Burns & McDonnell has assumed that each site will be decommissioned 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 Burns & McDonnell. It will be the contractor's responsibility to determine means and methods that result in safely decommissioning 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 vandalism, to increase cash flow, and for separation of recyclable materials, in order 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, CTs, steam turbine generators ("STG"), 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 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 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 for All Sites

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

1. The estimates are inclusive of all cost necessary to properly demolish all structures, equipment, boilers, tanks, conveying and ancillary buildings, and any other associated equipment and buildings to grade level. For purposes of this Study and the included cost estimates, the sites will be restored to a condition suitable for industrial use.
2. Pricing for all estimates is in 2017 dollars.
3. For purposes of this Study it is assumed that all units at the power station will be dismantled as part of a single demolition project.
4. 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.

5. All work will take place in the most cost-efficient method.
6. Labor costs are based on non-Union labor rates for a 50-hour workweek.
7. Soil testing and any other on-site testing has not been conducted for this Study. Any environmental clean-up or removal costs are based on previous testing or assumed levels of contamination.
8. 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. No allowances are included for unforeseen environmental remediation activities.
9. OGE will remove or consume all 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 feet of soil directly below each of the fuel oil tanks and five feet of soil beneath the fuel oil lines to account for the potential for this soil to be contaminated during normal operations.
10. Costs are included in the estimates for draining and disposing of transformer oils.
11. Hazardous material abatement is included for asbestos and mercury. Lead paint coated materials will be handled by trained personnel as necessary, but will not be removed prior to demolition.
12. In general, abatement of asbestos will precede any other work. After final air quality clearances have been reached, demolition can proceed. However, some abatement, including the removal of non-friable gaskets and packings will commence in conjunction with the demolition. If asbestos containing materials are found within the interior of boilers, stacks, ductwork or other equipment (including refractory), abatement will be coordinated closely with demolition.
13. 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.
14. Transmission switchyards and substations within the boundaries of the plant are not part of the demolition scope. For purposes of this Study, the division between generation assets and transmission assets is at the high side of the generator step-up transformers. Costs are included for removal of generation leads from the disconnect at the switchyard connection back to the generator step-up ("GSU") transformers and for the reserve power leads from the switchyard to the reserve power transformers.
15. Step-up transformers, auxiliary transformers, and spare transformers are included for demolition and scrap.

16. Soil around the GSU and other large transformers will be excavated to a depth of three feet and transported off-site for disposal. It is assumed that the polychlorinated biphenyl ("PCB") concentrations are below 50 ppm and will not be required to be disposed in a Toxic Substances and Control Act (TSCA) permitted landfill.
17. All above-grade structures will be demolished. All below-grade structures, including foundations, will be removed to three feet below existing grade, unless otherwise noted in the site-specific assumptions.
18. Foundations greater than three feet below grade will be abandoned in place.
19. Underground structures with cavities permanently sealed three feet below grade. Examples include cable tunnels and vaults, coal reclaim conveyor tunnels, and rotary car dumper structures.
20. Cooling towers and basin walls will be removed and have the basis floors will be broken to allow for drainage and then backfilled with on-site soil.
21. All roads, paving, crushed rock surfacing, and rail lines will remain.
22. Major equipment, structural steel, turbines, generators, transformers, electrical equipment, cabling, wiring, pump skids, above ground piping, and equipment enclosures for the above equipment are sold for scrap and removed from the site by the demolition contractor.
23. To the extent possible, concrete will be crushed and disposed of on-site. All other material that is not sold as scrap will be disposed of at an off-site landfill.
24. Except for the circulating water systems, underground piping will be capped and abandoned in place. Concrete circulating water piping will be excavated to the top of pipe, have the top of pipe broken, and backfilled with on-site material.
25. Shoreline structures are assumed to be removed, including lake and river pumping structures.
26. On-site ponds and lagoons closed in accordance with a closure plan approved by the appropriate State agencies. Ash ponds, lagoons, wells, coal pile areas, and landfill areas will be reviewed to determine preliminary closure plans that will to serve as the basis of those costs to be incorporated in the overall decommissioning cost estimate. Closure plans will be consistent with plans already approved by the appropriate State agencies, or will be developed according to Burns & McDonnell's understanding of the State requirements.
27. All production wells will be closed as per state regulations. Production wells will be filled with grout to approximately five feet below surface grade. The top five feet will be overdrilled and filled with soil backfill to grade on top of the grout. Monitoring wells will remain intact.
28. All burnable coal will be consumed by the plant prior to commencing decommissioning activities. The area underneath the coal piles will be excavated to a depth of one foot below grade to remove

any residual coal, this coal soil mix will be disposed of offsite and this area will be covered with six inches of soil.

29. Refractory brick will be disposed of at an off-site landfill.
30. 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.
31. Valuation and sale of land and all replacement generation costs are excluded from this scope.
32. 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 the decommissioning study. The decommissioning cost estimate is based on the end of useful life of the facility. 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.
33. Additional on-going costs may be required, including, but not limited to groundwater monitoring and/or other environmental monitoring activities. Present value estimates have been developed and included for required environmental monitoring program(s) necessary after decommissioning, closure of the plant site, the ponds, and lagoons.
34. A 20 percent contingency is included on the direct costs in the estimates prepared as part of this study to cover unknowns. Owner's indirect costs are included as 5 percent of the direct costs.
35. Scrap value of steel is included at $213.49 per net-ton.
36. Scrap value of copper is included at $1.98 per pound.
37. Aluminum value of scrap is included at $0.45 per pound.
38. Stainless value of scrap is included at $1,268.5 per ton.
39. Brass value of scrap is included at $1.40 per pound.
40. Market conditions may result in cost variations at the time of contract execution.

4.2 Site Specific Decommissioning Assumptions

The following site specific assumptions were made specific to each Plant cost estimate.

4.2.1 Centennial Wind Farm

1. Wind farm projects will be demolished to the level legally required. Information on legal requirements has been provided by OGE. Demolition is required to a depth of 36 inches below grade.
2. All wind turbine access roads installed as part of construction of the project will be removed and those site areas graded and seeded.

3. At the end of its useful life, crushed rock from access roads are assumed to be removed and the ownership of material to be transferred to the contractor resulting in zero hauling costs to the project.
4. All crushed rock areas are to be removed and seeded upon decommissioning.

4.2.2 Crossroads Wind Farm

1. Wind farm projects will be demolished to the level legally required. Information on legal requirements has been provided by OGE. Demolition is required to a depth of 30 inches below grade.
2. All wind turbine access roads installed as part of construction of the project will be removed and those site areas graded and seeded.
3. At the end of its useful life, crushed rock from access roads are assumed to be removed and the ownership of material to be transferred to the contractor resulting in zero hauling costs to the project.
4. All crushed rock areas are to be removed and seeded upon decommissioning.

4.2.3 Horseshoe Lake Plant

1. Units 1 through 5 were demolished in 2005. It is assumed all demolition and remediation activities were completed to the same level assumed in this Study; therefore, no costs associated with Units 1 through 5 are included in this Study.
2. Backup fuel oil tanks are assumed to have a minimal amount of fuel oil remaining. Costs for draining and disposing of this fuel oil are included, along with costs for flushing the tanks.

4.2.4 McClain Plant

1. The Airgas hydrogen storage tank is not owned by OGE and is excluded from the scope of the decommissioning estimates.
2. OGE owns a spare gas turbine, minus the casing, along with capital spares for a hot gas path inspection, which are located onsite. This equipment is included for scrap.
3. The concrete clarifier that is no longer in service is included for demolition and disposal.

4.2.5 Muskogee Power Plant

4. The on-site ash pond has already been closed and is excluded from the decommissioning costs presented in this Study.

4.2.6 Mustang Power Plant

1. Based on the site visit review and discussions with Plant staff, no PCB oils are assumed to be on-site or included in the cost estimate.
2. Unit 1 and Unit 2 GSU transformers have been removed from the site.
3. No costs are included for remediating historical coal storage areas, as these areas are assumed to have already been properly remediated.
4. Mustang CTs (6-13) currently under construction are included in the decommissioning costs presented in this Study.
5. Solar arrays at this Plant are included in the decommissioning costs presented in this Study.

4.2.7 Mustang Solar Site

1. It is assumed that there is no photovoltaic combining switchgear on site.

4.2.8 OU Spirit Wind Farm

1. Wind farm projects will be demolished to the level legally required. Information on legal requirements has been provided by OGE. Demolition is required to a depth of 48 inches below grade.
2. All wind turbine access roads installed as part of construction of the project will be removed and those site areas graded and seeded.
3. At the end of its useful life, crushed rock from access roads are assumed to be removed and the ownership of material to be transferred to the contractor resulting in zero hauling costs to the project.
4. All crushed rock areas are to be removed and seeded upon decommissioning.

4.2.9 Redbud Power Plant

1. The grey water supply lines from the wastewater treatment plant and wastewater return lines to the wastewater treatment plant are owned by the City of Oklahoma City and are therefore excluded from the decommissioning costs presented in this Study.
2. The water storage reservoir that is proposed to go in service in 2018 is excluded from the decommissioning costs presented in this Study.

4.2.10 Seminole Power Plant

1. Minimal asbestos abatement has taken place to date.

2. The backup fuel oil system has been decommissioned in place. The system is assumed to be drained but not flushed. Costs are included for flushing and demolishing this equipment, but no costs are included for draining and disposal of fuel oil.
3. The natural gas compression equipment on the northwest side of the plant is not a power generation asset and is therefore excluded from the decommissioning costs presented in this Study.
4. The combustion turbine has been decommissioned in place. Costs for demolition, disposal, and scrap credits for this combustion turbine are included in the decommissioning costs presented in this Study.

4.2.11 Sooner Power Plant

1. The boilers and critical piping do not include asbestos insulation. The site includes asbestos containing transite paneling for the majority of the building siding. Other than that, very little asbestos is included on-site, which mainly consists of expansion joints and gaskets.
2. Each unit includes an on-site spare GSU transformer. Costs for demolition, disposal, and scrap credits for these spare GSU transformers are included in the decommissioning costs presented in this Study.
3. The flue gas desulfurization system that is currently under construction is included in the decommissioning costs presented in this Study.

4.2.12 Tinker Air Force Base Power Plant

1. The jet fuel tanks are owned by the Air Force Base, not OGE, and are therefore excluded from the decommissioning costs presented in this Study.

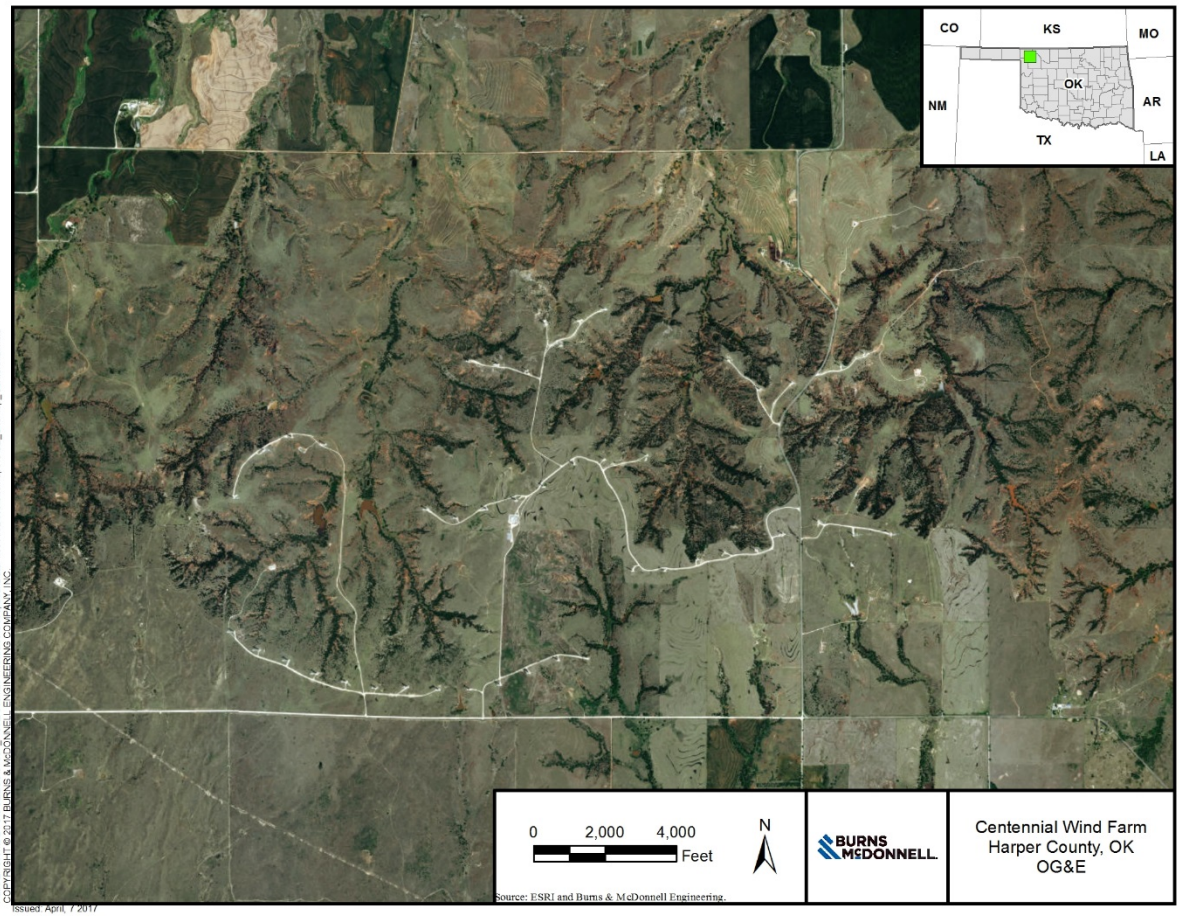
4.3 Results

Table 4-2 presents a summary of the decommissioning cost for each Plant. This summary provides a breakout of the major decommissioning activities and the scrap value for the Plant.

Table 4-1: Decommissioning Cost Summary (2017$)

Plant	Decommissioning Costs	Credits	Net Project Cost
Centennial Wind Farm	$8,319,000	$(6,049,000)	$2,270,000
Crossroads Wind Farm	$11,458,000	$(9,141,000)	$2,317,000
Horseshoe Lake Plant	$24,075,000	$(9,839,000)	$14,236,000
McClain Power Plant	$8,936,000	$(3,295,000)	$5,641,000
Muskogee Power Plant	$60,569,000	$(19,157,000)	$41,412,000
Mustang Power Plant	$28,126,000	$(8,248,000)	$19,878,000
Mustang SCGT	$4,294,000	$(2,501,000)	$1,793,000
Mustang Solar Site	$282,000	$(161,000)	$121,000
OU Spirit Wind Farm	$5,145,000	$(4,170,000)	$975,000
Redbud Power Plant	$18,688,000	$(8,297,000)	$10,391,000
Seminole Power Plant	$42,414,000	$(12,907,000)	$29,507,000
Sooner Power Plant	$50,269,000	$(17,348,000)	$32,921,000
Tinker Air Force Base	$986,000	$(513,000)	$473,000
Fleet Total	**$263,561,000**	**($101,626,000)**	**$161,935,000**

APPENDIX A - PLANT AERIALS



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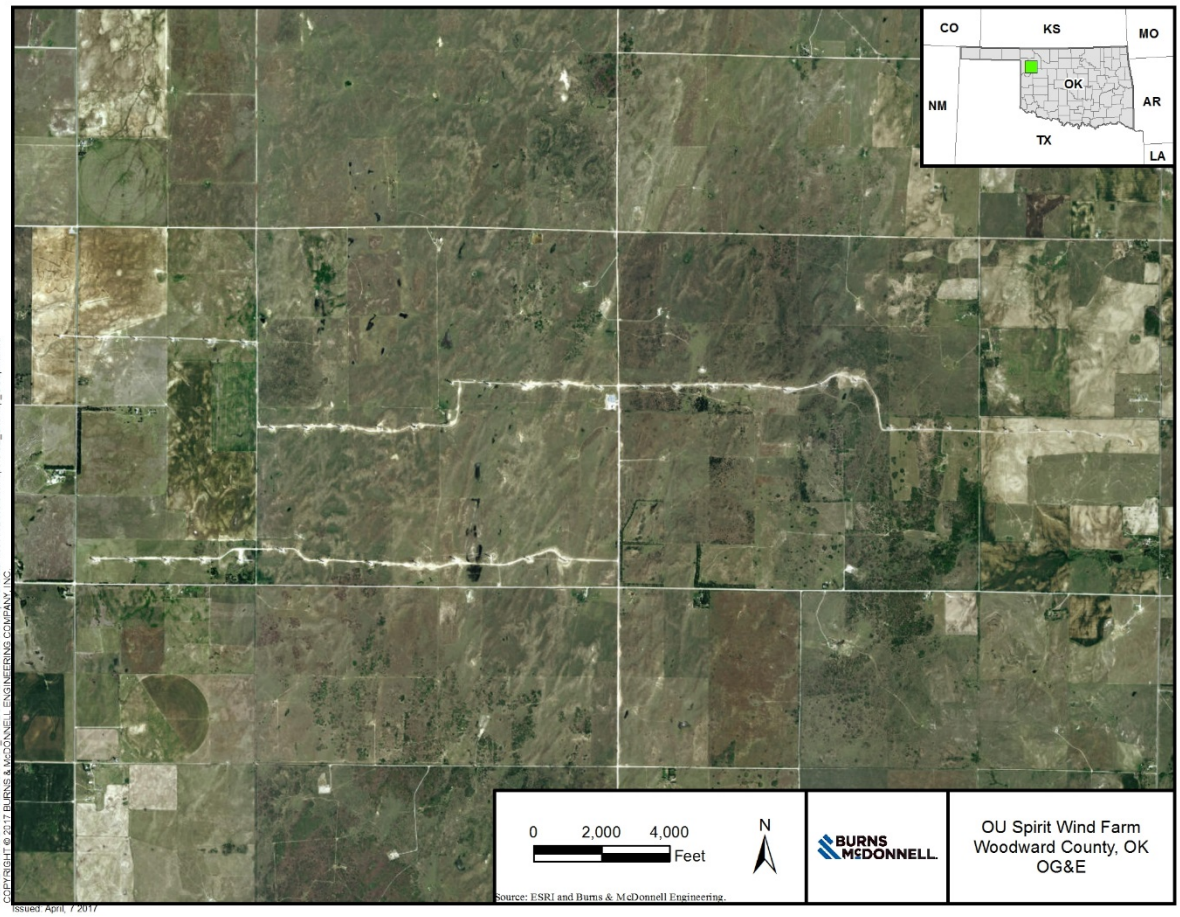
Issued: April, 7 2017



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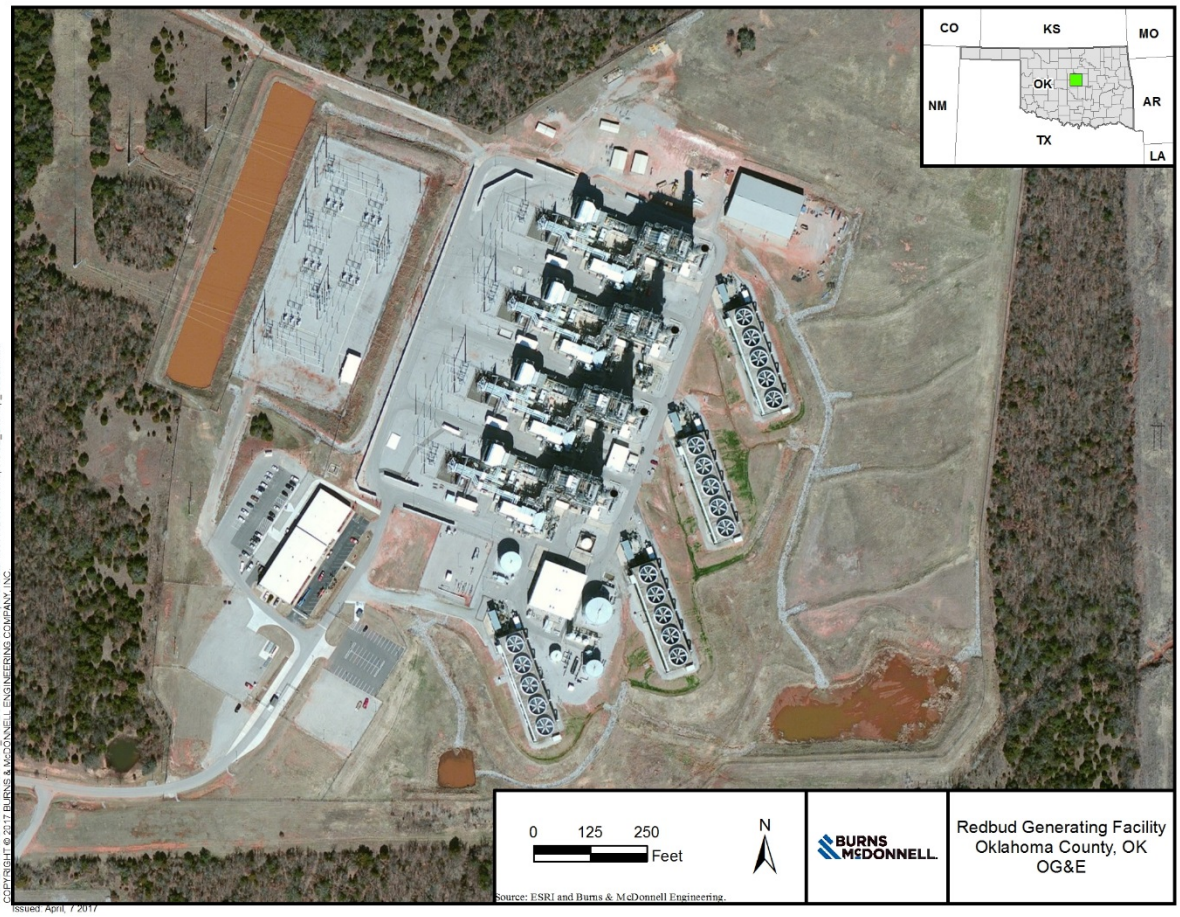

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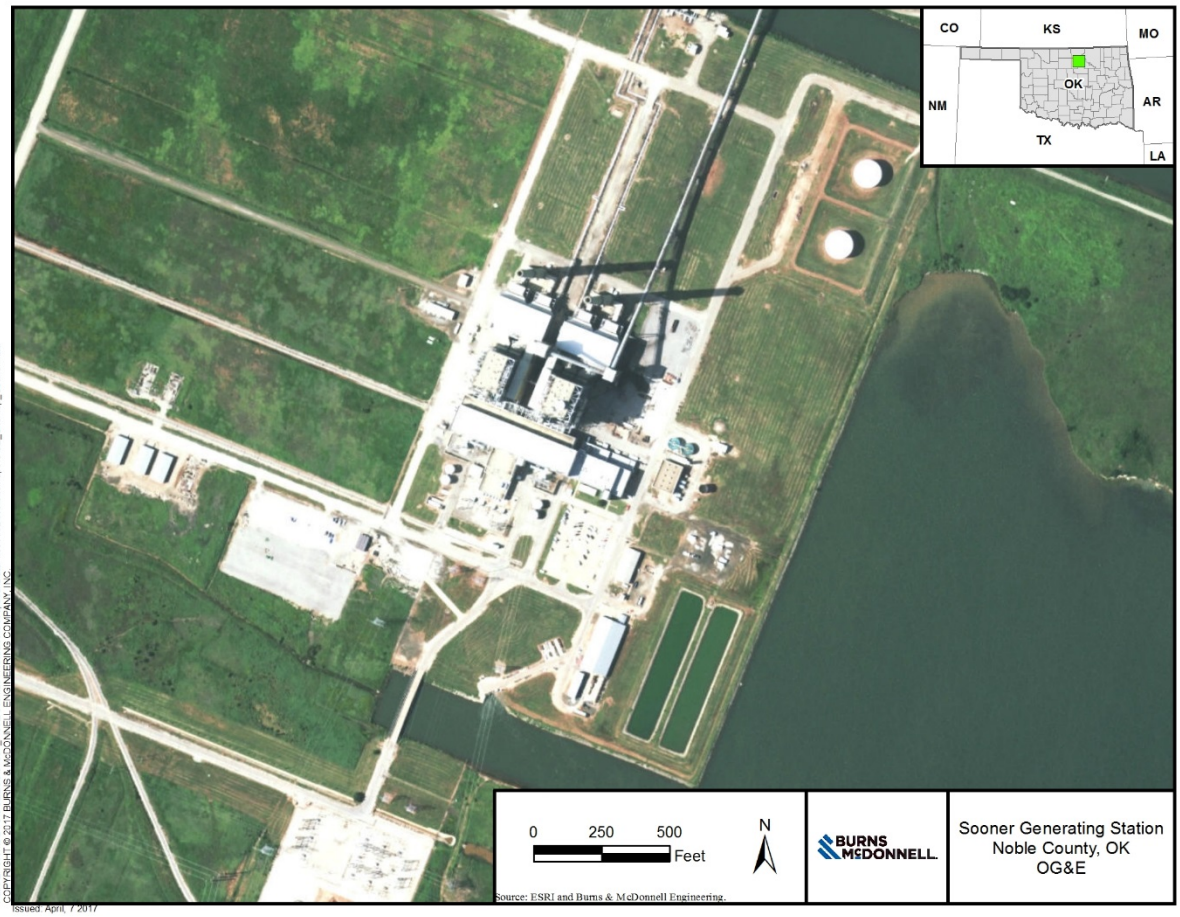

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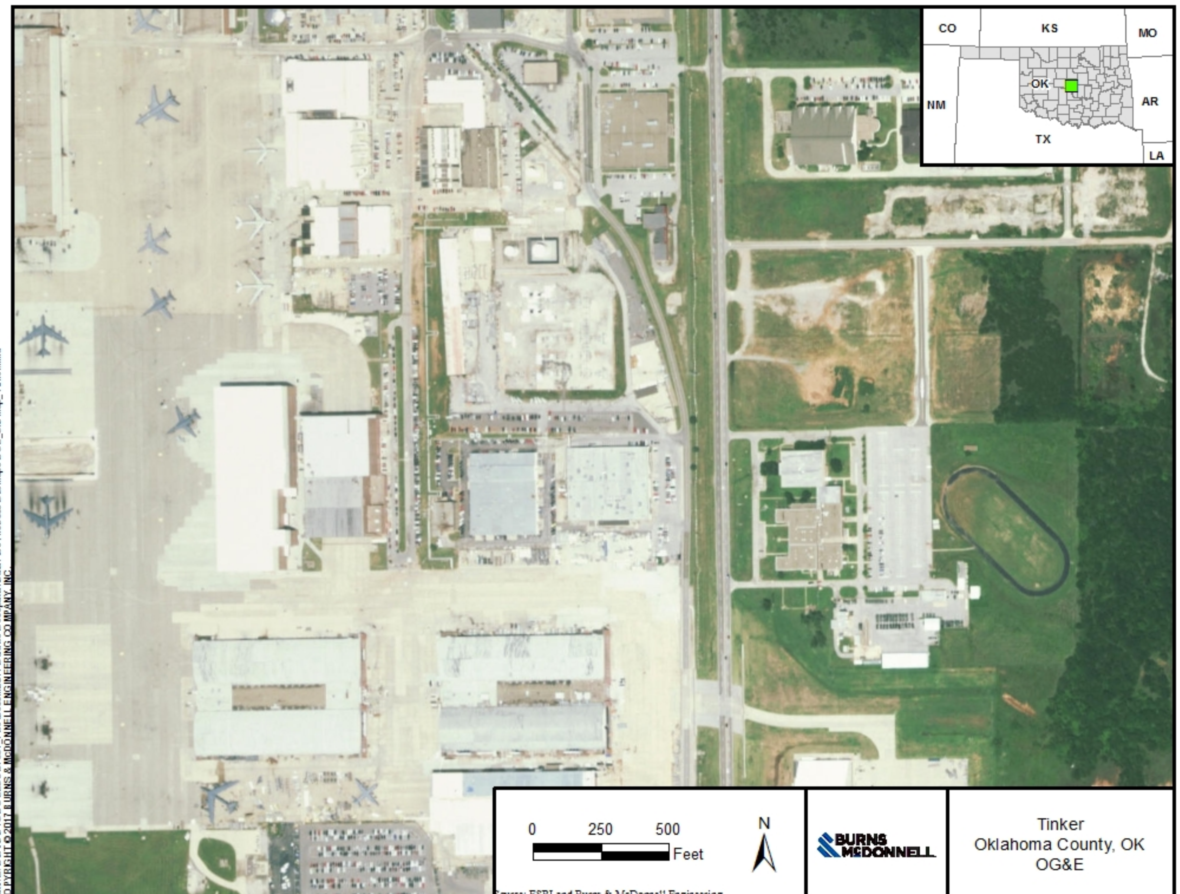

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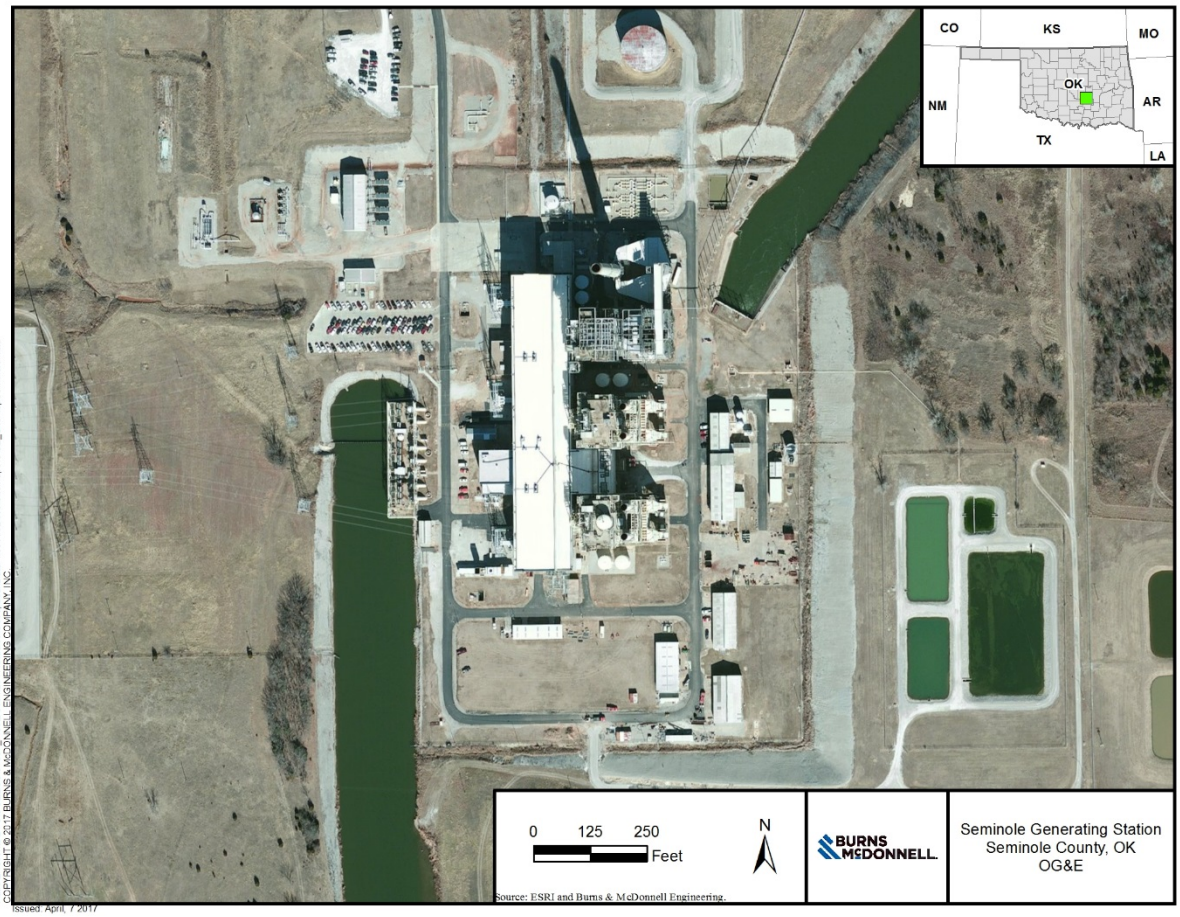

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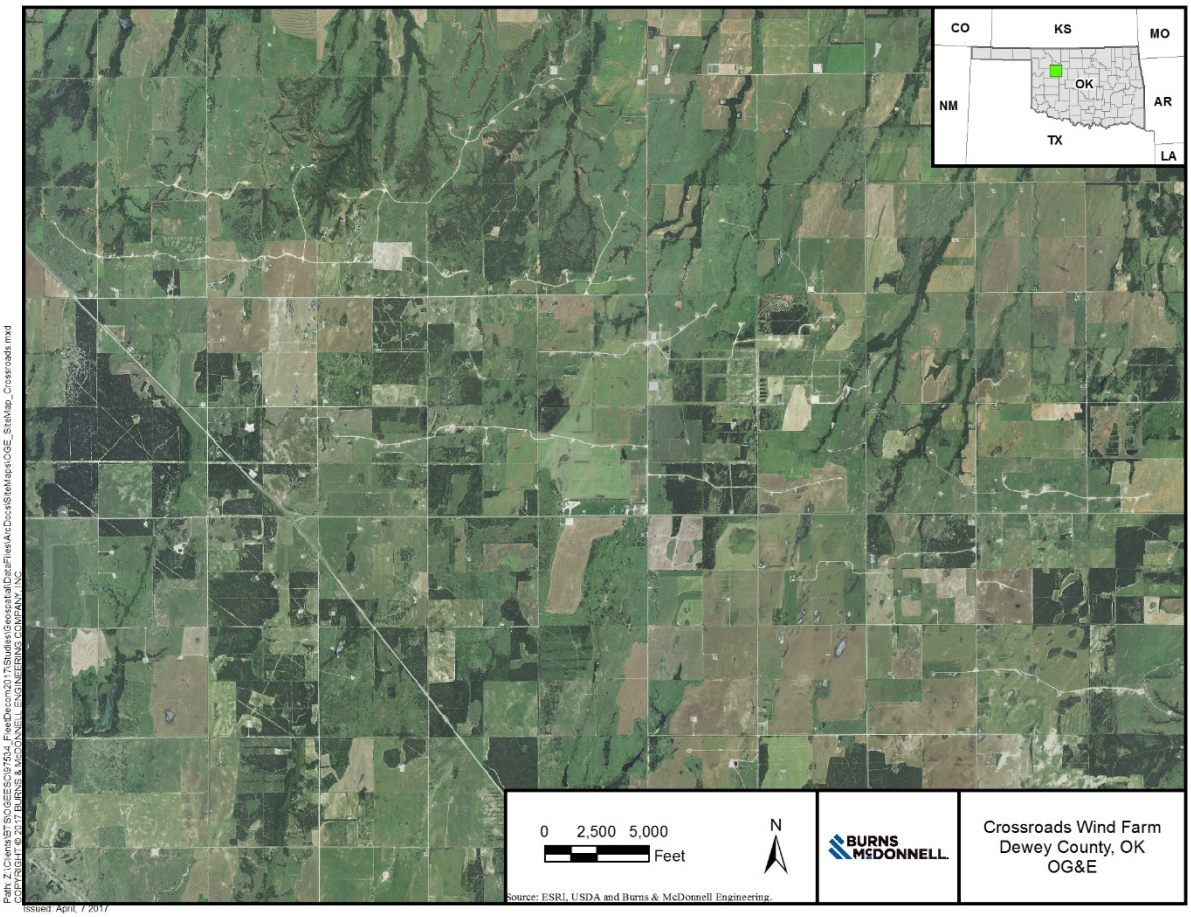

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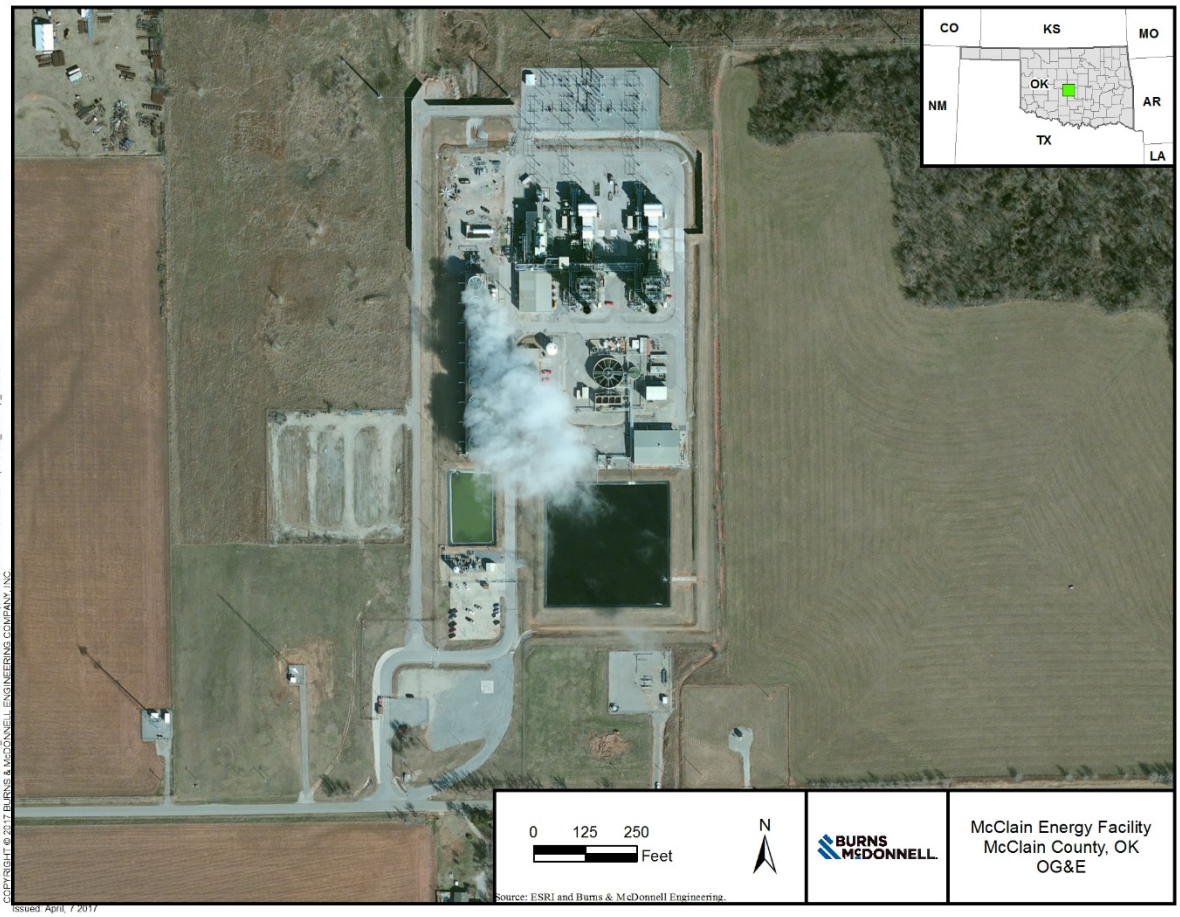

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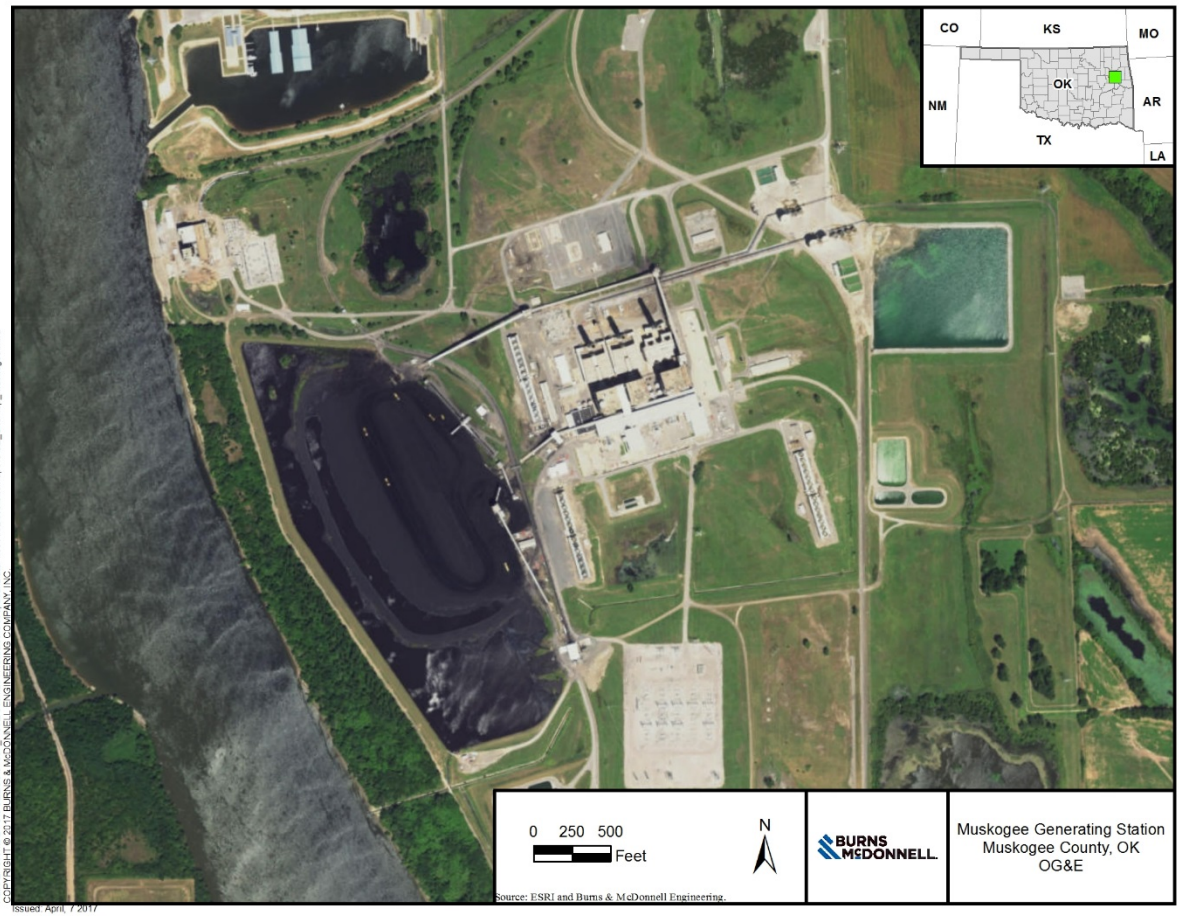

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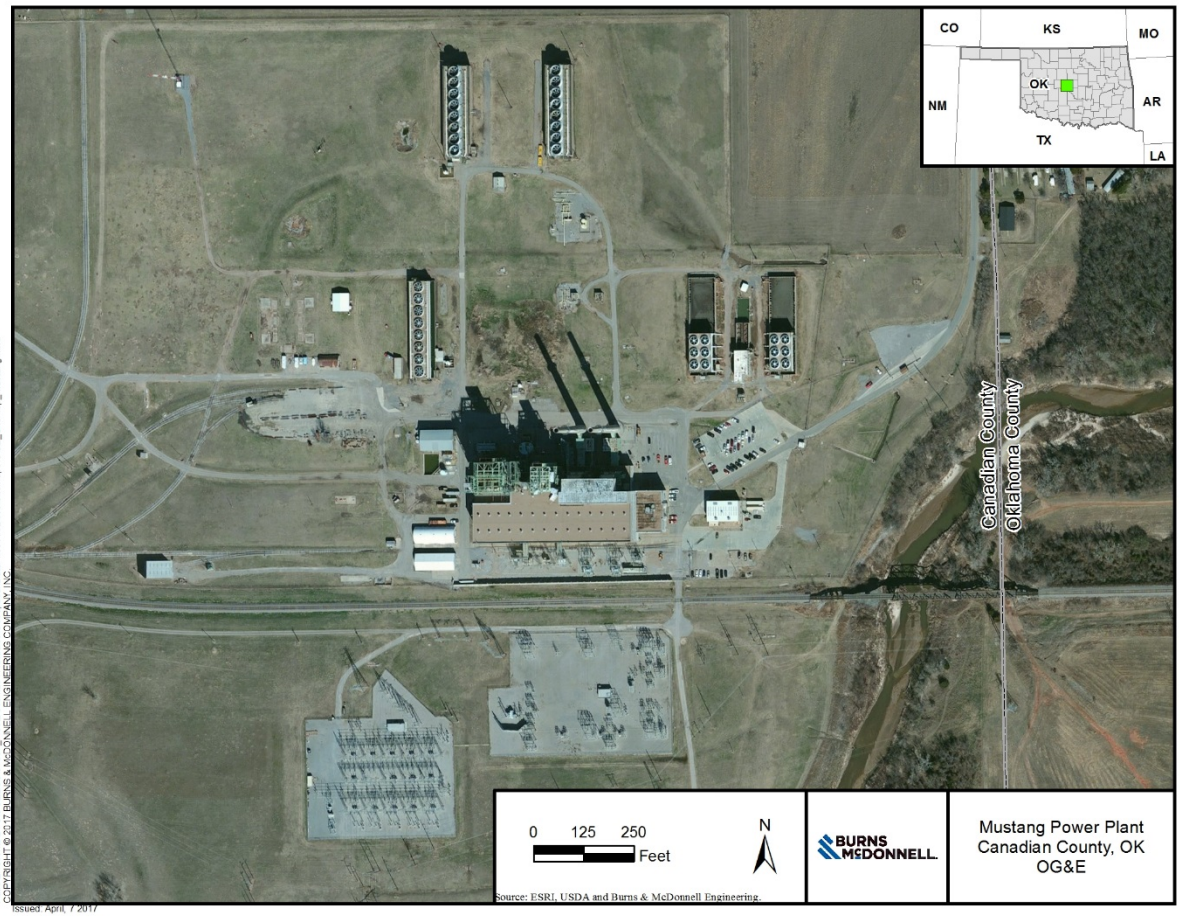

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Issued: April, 7 2017

APPENDIX B - COST ESTIMATE SUMMARIES

Table A-1
Centennial
Decommissioning Cost Summary

	Total Cost	Scrap Value
Centennial		
Wind Turbine & Foundation Removal Cost		
Nacelle, Tower, & Electrical Removal	$ 3,411,000	$ -
Blade & Foundation Removal	$ 1,862,000	$ -
Disposal	$ 394,000	$ -
Scrap	$ -	$ (5,957,000)
Subtotal	**$ 5,667,000**	**$ (5,957,000)**
Mobilization & Demobilization		
Mobilization/Demobilization	$ 50,000	$ -
Subtotal	**$ 50,000**	**$ -**
Substation Removal Cost		
Above Ground Equipment Removal	$ 69,000	$ -
Demolition (Foundations, Fencing, Crushed Rock Removal)	$ 35,000	$ -
Demolition Hauling	$ 1,000	$ -
Disposal	$ 19,000	$ -
Scrap	$ -	$ (78,000)
Subtotal	**$ 124,000**	**$ (78,000)**
O&M Facility Building Removal Cost		
Building & Foundation Demolition	$ 49,000	$ -
Fencing and Crushed Rock Surface Removal	$ 12,000	$ -
Hauling	$ 1,000	$ -
Disposal	$ 20,000	$ -
Scrap	$ -	$ (14,000)
Subtotal	**$ 82,000**	**$ (14,000)**
Crushed Rock Road Surface Removal Cost		
Surfacing Removal	$ 400,000	$ -
Subtotal	**$ 400,000**	**$ -**
Environmental Cost		
Hazardous Material Removal & Disposal	$ 63,000	$ -
Grading and Seeing	$ 269,000	$ -
Subtotal	**$ 332,000**	**$ -**
Centennial Subtotal	**$ 6,655,000**	**$ (6,049,000)**
TOTAL DECOM COST (CREDIT)	**$ 6,655,000**	**$ (6,049,000)**
PROJECT INDIRECTS (5%)	**$ 333,000**	
CONTINGENCY (20%)	**$ 1,331,000**	
TOTAL PROJECT COST (CREDIT)	**$ 8,319,000**	**$ (6,049,000)**
TOTAL NET PROJECT COST (CREDIT)	**$ 2,270,000**	

Table A-1
Crossroads
Decommissioning Cost Summary

	Total Cost	Scrap Value
Crossroads		
Wind Turbine & Foundation Removal Cost		
Nacelle, Tower, & Electrical Removal	$ 4,179,000	$ -
Blade & Foundation Removal	$ 2,231,000	$ -
Disposal	$ 576,000	$ -
Scrap	$ -	$ (8,953,000)
Subtotal	**$ 6,986,000**	**$ (8,953,000)**
Mobilization & Demobilization		
Mobilization/Demobilization	$ 50,000	$ -
Subtotal	**$ 50,000**	**$ -**
Substation Removal Cost		
Above Ground Equipment Removal	$ 84,000	$ -
Demolition (Foundations, Fencing, Crushed Rock Removal)	$ 84,000	$ -
Demolition Hauling	$ 2,000	$ -
Disposal	$ 39,000	$ -
Scrap	$ -	$ (186,000)
Subtotal	**$ 209,000**	**$ (186,000)**
O&M Facility Building Removal Cost		
Building & Foundation Demolition	$ 35,000	$ -
Fencing and Crushed Rock Surface Removal	$ 4,000	$ -
Hauling	$ 1,000	$ -
Disposal	$ 15,000	$ -
Scrap	$ -	$ (2,000)
Subtotal	**$ 55,000**	**$ (2,000)**
Crushed Rock Road Surface Removal Cost		
Surfacing Removal	$ 893,000	$ -
Subtotal	**$ 893,000**	**$ -**
Environmental Cost		
Hazardous Material Removal & Disposal	$ 363,000	$ -
Grading and Seeing	$ 611,000	$ -
Subtotal	**$ 974,000**	**$ -**
Crossroads Subtotal	**$ 9,167,000**	**$ (9,141,000)**
TOTAL DECOM COST (CREDIT)	**$ 9,167,000**	**$ (9,141,000)**
PROJECT INDIRECTS (5%)	**$ 458,000**	
CONTINGENCY (20%)	**$ 1,833,000**	
TOTAL PROJECT COST (CREDIT)	**$ 11,458,000**	**$ (9,141,000)**
TOTAL NET PROJECT COST (CREDIT)	**$ 2,317,000**	

Table B-3
Horseshoe Lake
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Horseshoe Lake						
Unit 6						
Asbestos Removal	$ -	$ -	$ -	$ 399,000	$ 399,000	$ -
Boiler	$ 1,014,000	$ 1,145,000	$ -	$ -	$ 2,159,000	$ -
Steam Turbine & Building	$ 601,000	$ 679,000	$ -	$ -	$ 1,280,000	$ -
Switchgear and Electrical	$ 10,000	$ 11,000	$ -	$ -	$ 21,000	$ -
Cooling Towers & Circulating Water	$ -	$ -	$ -	$ 5,000	$ 5,000	$ -
GSU & Foundation	$ 23,000	$ 26,000	$ -	$ -	$ 49,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 55,000	$ -	$ 55,000	$ -
Debris	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (2,316,000)
Subtotal	**$ 1,648,000**	**$ 1,861,000**	**$ 97,000**	**$ 404,000**	**$ 4,010,000**	**$ (2,316,000)**
Unit 7						
Asbestos Removal	$ -	$ -	$ -	$ 515,000	$ 515,000	$ -
Boiler	$ 1,175,000	$ 1,326,000	$ -	$ -	$ 2,501,000	$ -
Steam Turbine & Building	$ 647,000	$ 731,000	$ -	$ -	$ 1,378,000	$ -
Switchgear and Electrical	$ 10,000	$ 11,000	$ -	$ -	$ 21,000	$ -
Cooling Towers & Circulating Water	$ -	$ -	$ -	$ 4,000	$ 4,000	$ -
GSU & Foundation	$ 23,000	$ 26,000	$ -	$ -	$ 49,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
Debris	$ -	$ -	$ 43,000	$ -	$ 43,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (2,340,000)
Subtotal	**$ 1,855,000**	**$ 2,094,000**	**$ 85,000**	**$ 519,000**	**$ 4,553,000**	**$ (2,340,000)**
Unit 7 (CT)						
CTs	$ 56,000	$ 63,000	$ -	$ -	$ 119,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (137,000)
Subtotal	**$ 56,000**	**$ 63,000**	**$ -**	**$ -**	**$ 119,000**	**$ (137,000)**
Unit 8						
Asbestos Removal	$ -	$ -	$ -	$ 1,180,000	$ 1,180,000	$ -
Boiler	$ 2,067,000	$ 2,334,000	$ -	$ -	$ 4,401,000	$ -
Steam Turbine & Building	$ 884,000	$ 998,000	$ -	$ -	$ 1,882,000	$ -
Switchgear and Electrical	$ 10,000	$ 11,000	$ -	$ -	$ 21,000	$ -
Cooling Towers & Circulating Water	$ -	$ -	$ -	$ 5,000	$ 5,000	$ -
GSU & Foundation	$ 31,000	$ 35,000	$ -	$ -	$ 66,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
Debris	$ -	$ -	$ 56,000	$ -	$ 56,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (4,141,000)
Subtotal	**$ 2,992,000**	**$ 3,378,000**	**$ 116,000**	**$ 1,185,000**	**$ 7,671,000**	**$ (4,141,000)**
Unit 9						
CTs	$ 125,000	$ 141,000	$ -	$ -	$ 267,000	$ -
Stack (Metal)	$ -	$ -	$ -	$ -	$ -	$ -
GSUs, Electical, & Foundation	$ 11,000	$ 12,000	$ -	$ -	$ 22,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (359,000)
Subtotal	**$ 136,000**	**$ 153,000**	**$ -**	**$ -**	**$ 289,000**	**$ (359,000)**
Unit 10						
CTs	$ 125,000	$ 141,000	$ -	$ -	$ 267,000	$ -
Stack (Metal)	$ -	$ -	$ -	$ -	$ -	$ -
GSUs. Electical. & Foundation	$ 8,000	$ 9,000	$ -	$ -	$ 17,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (355,000)
	$ 133,000	**$ 150,000**	**$ -**	**$ -**	**$ 284,000**	**$ (355,000)**
Common						
All BOP Buildings	$ 96,000	$ 108,000	$ -	$ -	$ 204,000	$ -
Fuel Equipment	$ 13,000	$ 15,000	$ -	$ -	$ 28,000	$ -
Cooling Towers & Circulating Water	$ 126,000	$ 142,000	$ -	$ -	$ 268,000	$ -
Transformer Oil Disposal	$ -	$ -	$ -	$ 112,000	$ 112,000	$ -
Transformer Pad and Soil Removal	$ -	$ -	$ -	$ 11,000	$ 11,000	$ -
Soil Remediation Beneath Fuel Oil Tank	$ -	$ -	$ -	$ 24,000	$ 24,000	$ -
Fuel Oil Tank Cleaning	$ -	$ -	$ -	$ 211,000	$ 211,000	$ -
Fuel Oil Line Flushing/Cleaning	$ -	$ -	$ -	$ 1,000	$ 1,000	$ -
Pond Closures	$ -	$ -	$ -	$ 1,358,000	$ 1,358,000	$ -
Concrete Crushing & Disposal	$ -	$ -	$ 18,000	$ -	$ 18,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 83,000	$ 83,000	$ -
Debris	$ -	$ -	$ 16,000	$ -	$ 16,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (191,000)
	$ 235,000	**$ 265,000**	**$ 34,000**	**$ 1,800,000**	**$ 2,334,000**	**$ (191,000)**
Horseshoe Lake Subtotal	**$ 7,055,000**	**$ 7,964,000**	**$ 332,000**	**$ 3,908,000**	**$ 19,260,000**	**$ (9,839,000)**
TOTAL DECOM COST (CREDIT)					**$ 19,260,000**	**$ (9,839,000)**
PROJECT INDIRECTS (5%)					**$ 963,000**	
CONTINGENGY (20%)					**$ 3,852,000**	
TOTAL PROJECT COST (CREDIT)					**$ 24,075,000**	**$ (9,839,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 14,236,000**	

Table B-4
McClain
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
McClain						
Unit 1						
CTs and HRSGs	$ 1,395,000	$ 1,575,000	$ -	$ -	$ 2,970,000	$ -
Steam Turbine & Building	$ 566,000	$ 639,000	$ -	$ -	$ 1,205,000	$ -
SCR	$ 54,000	$ 61,000	$ -	$ -	$ 115,000	$ -
Cooling Towers & Basin	$ 94,000	$ 106,000	$ -	$ 3,000	$ 203,000	$ -
GSU & Foundation	$ 77,000	$ 87,000	$ -	$ -	$ 164,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 63,000	$ -	$ 63,000	$ -
Debris	$ -	$ -	$ 14,000	$ -	$ 14,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (3,168,000)
Subtotal	**$ 2,186,000**	**$ 2,468,000**	**$ 77,000**	**$ 3,000**	**$ 4,734,000**	**$ (3,168,000)**
Common						
Switchgear & Electrical	$ 5,000	$ 5,000	$ -	$ -	$ 10,000	$ -
Cooling Water Intakes and Circulating Water Pumps	$ 36,000	$ 41,000	$ -	$ -	$ 77,000	$ -
Pond Closures	$ -	$ -	$ -	$ 814,000	$ 814,000	$ -
BOP Miscellaneous	$ 15,000	$ 17,000	$ -	$ -	$ 32,000	$ -
All BOP Buildings	$ 142,000	$ 160,000	$ -	$ -	$ 302,000	$ -
All Other Tanks	$ 50,000	$ 56,000	$ -	$ -	$ 106,000	$ -
Mercury & Universal Waste Disposal	$ -	$ -	$ -	$ 18,000	$ 18,000	$ -
Transformer Oil Disposal	$ -	$ -	$ -	$ 58,000	$ 58,000	$ -
Transformer Pad and Soil Removal	$ -	$ -	$ -	$ 18,000	$ 18,000	$ -
Concrete Removal, Crushing, & Disposal	$ -	$ -	$ 13,000	$ -	$ 13,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 965,000	$ 965,000	$ -
Debris	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (127,000)
Subtotal	**$ 248,000**	**$ 279,000**	**$ 15,000**	**$ 1,873,000**	**$ 2,415,000**	**$ (127,000)**
McClain Subtotal	**$ 2,434,000**	**$ 2,747,000**	**$ 92,000**	**$ 1,876,000**	**$ 7,149,000**	**$ (3,295,000)**
TOTAL DECOM COST (CREDIT)					**$ 7,149,000**	**$ (3,295,000)**
PROJECT INDIRECTS (5%)					**$ 357,000**	
CONTINGENGY (20%)					**$ 1,430,000**	
TOTAL PROJECT COST (CREDIT)					**$ 8,936,000**	**$ (3,295,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 5,641,000**	

Table B-5
Muskogee
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Muskogee						
Unit 4						
Asbestos Removal	$ -	$ -	$ -	$ 1,013,000	$ 1,013,000	$ -
Boiler	$ 2,707,000	$ 3,057,000	$ -	$ -	$ 5,764,000	$ -
Steam Turbine & Building	$ 1,154,000	$ 1,303,000	$ -	$ -	$ 2,457,000	$ -
Precipitator	$ 709,000	$ 800,000	$ -	$ -	$ 1,509,000	$ -
Switchgear and Electrical	$ 9,000	$ 10,000	$ -	$ -	$ 19,000	$ -
Stacks	$ 144,000	$ 162,000	$ -	$ -	$ 306,000	$ -
Cooling Tower & Circulating Water	$ 121,000	$ 136,000	$ -	$ 24,000	$ 281,000	$ -
GSU & Foundation	$ 64,000	$ 72,000	$ -	$ -	$ 136,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 139,000	$ -	$ 139,000	$ -
Debris	$ -	$ -	$ 328,000	$ -	$ 328,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (6,296,000)
Subtotal	**$ 4,908,000**	**$ 5,540,000**	**$ 467,000**	**$ 1,037,000**	**$ 11,952,000**	**$ (6,296,000)**
Unit 5						
Asbestos Removal	$ -	$ -	$ -	$ 1,013,000	$ 1,013,000	$ -
Boiler	$ 2,707,000	$ 3,057,000	$ -	$ -	$ 5,764,000	$ -
Steam Turbine & Building	$ 1,154,000	$ 1,303,000	$ -	$ -	$ 2,457,000	$ -
Precipitator	$ 709,000	$ 800,000	$ -	$ -	$ 1,509,000	$ -
Switchgear and Electrical	$ 9,000	$ 10,000	$ -	$ -	$ 19,000	$ -
Stacks	$ 144,000	$ 162,000	$ -	$ -	$ 306,000	$ -
Cooling Tower & Circulating Water	$ 121,000	$ 136,000	$ -	$ 26,000	$ 283,000	$ -
GSU & Foundation	$ 64,000	$ 72,000	$ -	$ -	$ 136,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 139,000	$ -	$ 139,000	$ -
Debris	$ -	$ -	$ 328,000	$ -	$ 328,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (6,296,000)
Subtotal	**$ 4,908,000**	**$ 5,540,000**	**$ 467,000**	**$ 1,039,000**	**$ 11,954,000**	**$ (6,296,000)**
Unit 6						
Asbestos Removal	$ -	$ -	$ -	$ 1,013,000	$ 1,013,000	$ -
Boiler	$ 2,710,000	$ 3,060,000	$ -	$ -	$ 5,770,000	$ -
Steam Turbine & Building	$ 1,227,000	$ 1,385,000	$ -	$ -	$ 2,612,000	$ -
Precipitator	$ 704,000	$ 795,000	$ -	$ -	$ 1,499,000	$ -
Switchgear and Electrical	$ 9,000	$ 10,000	$ -	$ -	$ 19,000	$ -
Stacks	$ 218,000	$ 247,000	$ -	$ -	$ 465,000	$ -
Cooling Tower & Circulating Water	$ 120,000	$ 135,000	$ -	$ 27,000	$ 282,000	$ -
GSU & Foundation	$ 47,000	$ 53,000	$ -	$ -	$ 100,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 155,000	$ -	$ 155,000	$ -
Debris	$ -	$ -	$ 422,000	$ -	$ 422,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (6,323,000)
Subtotal	**$ 5,035,000**	**$ 5,685,000**	**$ 577,000**	**$ 1,040,000**	**$ 12,337,000**	**$ (6,323,000)**
Handling						
Coal Handling Facilities	$ 146,000	$ 165,000	$ -	$ -	$ 311,000	$ -
Rail Spur Removal	$ -	$ -	$ -	$ -	$ -	$ -
Coal Pile Remediation	$ -	$ -	$ -	$ 10,107,000	$ 10,107,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 6,000	$ -	$ 6,000	$ -
Debris	$ -	$ -	$ 3,000	$ -	$ 3,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (105,000)
Subtotal	**$ 146,000**	**$ 165,000**	**$ 9,000**	**$ 10,107,000**	**$ 10,427,000**	**$ (105,000)**
Common						
Circulating Water	$ 69,000	$ 78,000	$ -	$ -	$ 147,000	$ -
All BOP Buildings	$ 264,000	$ 298,000	$ -	$ -	$ 562,000	$ -
Mercury & Universal Waste Disposal	$ -	$ -	$ -	$ 46,000	$ 46,000	$ -
Plant Wash Down & Disposal	$ -	$ -	$ -	$ 64,000	$ 64,000	$ -
Transformer Oil Disposal	$ -	$ -	$ -	$ 207,000	$ 207,000	$ -
Transformer Pad and Soil Removal	$ -	$ -	$ -	$ 97,000	$ 97,000	$ -
Concrete Removal, Crushing, & Disposal	$ -	$ -	$ 20,000	$ -	$ 20,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (137,000)
Subtotal	**$ 333,000**	**$ 376,000**	**$ 20,000**	**$ 1,056,000**	**$ 1,785,000**	**$ (137,000)**
Muskogee Subtotal	**$ 15,330,000**	**$ 17,306,000**	**$ 1,540,000**	**$ 14,279,000**	**$ 48,455,000**	**$ (19,157,000)**
TOTAL DECOM COST (CREDIT)					**$ 48,455,000**	**$ (19,157,000)**
PROJECT INDIRECTS (5%)					**$ 2,423,000**	
CONTINGENGY (20%)					**$ 9,691,000**	
TOTAL PROJECT COST (CREDIT)					**$ 60,569,000**	**$ (19,157,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 41,412,000**	

Table B-6
Mustang ST
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Mustang ST						
Unit 1						
Asbestos Removal	$ -	$ -	$ -	$ 537,000	$ 537,000	$ -
Boiler	$ 589,000	$ 665,000	$ -	$ -	$ 1,255,000	$ -
Steam Turbine & Building	$ 390,000	$ 440,000	$ -	$ -	$ 829,000	$ -
Switchgear and Electrical	$ 10,000	$ 11,000	$ -	$ -	$ 21,000	$ -
Stacks	$ 90,000	$ 101,000	$ -	$ -	$ 191,000	$ -
Cooling Towers & Circulating Water	$ 55,000	$ 62,000	$ -	$ 12,000	$ 128,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 56,000	$ -	$ 56,000	$ -
Debris	$ -	$ -	$ 101,000	$ -	$ 101,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (1,104,000)
Subtotal	**$ 1,134,000**	**$ 1,279,000**	**$ 157,000**	**$ 549,000**	**$ 3,118,000**	**$ (1,104,000)**
Unit 2						
Asbestos Removal	$ -	$ -	$ -	$ 537,000	$ 537,000	$ -
Boiler	$ 590,000	$ 666,000	$ -	$ -	$ 1,256,000	$ -
Steam Turbine & Building	$ 390,000	$ 440,000	$ -	$ -	$ 829,000	$ -
Switchgear and Electrical	$ 10,000	$ 11,000	$ -	$ -	$ 21,000	$ -
Stacks	$ 90,000	$ 101,000	$ -	$ -	$ 191,000	$ -
Cooling Towers & Circulating Water	$ 55,000	$ 62,000	$ -	$ 11,000	$ 127,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 56,000	$ -	$ 56,000	$ -
Debris	$ -	$ -	$ 101,000	$ -	$ 101,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (1,104,000)
Subtotal	**$ 1,135,000**	**$ 1,280,000**	**$ 157,000**	**$ 548,000**	**$ 3,118,000**	**$ (1,104,000)**
Unit 3						
Asbestos Removal	$ -	$ -	$ -	$ 1,430,000	$ 1,430,000	$ -
Boiler	$ 1,232,000	$ 1,392,000	$ -	$ -	$ 2,624,000	$ -
Steam Turbine & Building	$ 700,000	$ 790,000	$ -	$ -	$ 1,491,000	$ -
Switchgear and Electrical	$ 10,000	$ 11,000	$ -	$ -	$ 21,000	$ -
Cooling Towers & Circulating Water	$ 77,000	$ 86,000	$ -	$ 9,000	$ 172,000	$ -
GSU & Foundation	$ 26,000	$ 29,000	$ -	$ -	$ 55,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 52,000	$ -	$ 52,000	$ -
Debris	$ -	$ -	$ 23,000	$ -	$ 23,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (2,367,000)
Subtotal	**$ 2,045,000**	**$ 2,308,000**	**$ 75,000**	**$ 1,439,000**	**$ 5,868,000**	**$ (2,367,000)**
Unit 4						
Asbestos Removal	$ -	$ -	$ -	$ 2,720,000	$ 2,720,000	$ -
Boiler	$ 1,880,000	$ 2,123,000	$ -	$ -	$ 4,004,000	$ -
Steam Turbine & Building	$ 831,000	$ 939,000	$ -	$ -	$ 1,770,000	$ -
Switchgear and Electrical	$ 10,000	$ 11,000	$ -	$ -	$ 21,000	$ -
Cooling Towers & Circulating Water	$ 130,000	$ 147,000	$ -	$ 40,000	$ 317,000	$ -
GSU & Foundation	$ 29,000	$ 32,000	$ -	$ -	$ 61,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 63,000	$ -	$ 63,000	$ -
Debris	$ -	$ -	$ 43,000	$ -	$ 43,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (3,533,000)
Subtotal	**$ 2,880,000**	**$ 3,252,000**	**$ 106,000**	**$ 2,760,000**	**$ 8,999,000**	**$ (3,533,000)**
Common						
All BOP Buildings	$ 209,000	$ 236,000	$ -	$ -	$ 445,000	$ -
All Other Tanks	$ 26,000	$ 30,000	$ -	$ -	$ 56,000	$ -
Transformer Oil Disposal	$ -	$ -	$ -	$ 36,000	$ 36,000	$ -
Mercury & Universal Waste Disposal	$ -	$ -	$ -	$ 29,000	$ 29,000	$ -
Pond Closures	$ -	$ -	$ -	$ 267,000	$ 267,000	$ -
Concrete Removal, Crushing, & Disposal	$ -	$ -	$ 20,000	$ -	$ 20,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (140,000)
Subtotal	**$ 346,000**	**$ 391,000**	**$ 25,000**	**$ 636,000**	**$ 1,398,000**	**$ (140,000)**
Subtotal	**$ 5,271,000**	**$ 5,951,000**	**$ 206,000**	**$ 4,835,000**	**$ 22,501,000**	**$ (8,248,000)**
TOTAL DECOM COST (CREDIT)					**$ 22,501,000**	**$ (8,248,000)**
PROJECT INDIRECTS (5%)					**$ 1,125,000**	
CONTINGENCY (20%)					**$ 4,500,000**	
TOTAL PROJECT COST (CREDIT)					**$ 28,126,000**	**$ (8,248,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 19,878,000**	

Table B-7
Mustang CT
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Mustang CT						
CT 6-12						
Turbines & Foundations	$ 1,105,000	$ 1,248,000	$ -	$ -	$ 2,353,000	$ -
GSUs	$ 47,000	$ 54,000	$ -	$ -	$ 101,000	$ -
Stack	$ -	$ -	$ -	$ -	$ -	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
Debris	$ -	$ -	$ 16,000	$ -	$ 16,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (2,443,000)
Subtotal	**$ 1,152,000**	**$ 1,302,000**	**$ 58,000**	**$ -**	**$ 2,512,000**	**$ (2,443,000)**
Common						
Water Treatment Equipment and Piping	$ 11,000	$ 12,000	$ -	$ 39,000	$ 62,000	$ -
All BOP Buildings	$ 23,000	$ 26,000	$ -	$ -	$ 49,000	$ -
All Other Tanks	$ 21,000	$ 24,000	$ -	$ -	$ 45,000	$ -
Switchgear & Electrical	$ 5,000	$ 5,000	$ -	$ -	$ 10,000	$ -
Wells	$ -	$ -	$ -	$ 89,000	$ 89,000	$ -
Mercury & Universal Waste Disposal	$ -	$ -	$ -	$ 13,000	$ 13,000	$ -
Transformer Oil Disposal	$ -	$ -	$ -	$ 71,000	$ 71,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 584,000	$ 584,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (58,000)
Subtotal	**$ 60,000**	**$ 67,000**	**$ -**	**$ 796,000**	**$ 923,000**	**$ (58,000)**
Mustang CT Subtotal	**$ 1,212,000**	**$ 1,369,000**	**$ 58,000**	**$ 796,000**	**$ 3,435,000**	**$ (2,501,000)**
TOTAL DECOM COST (CREDIT)					**$ 3,435,000**	**$ (2,501,000)**
PROJECT INDIRECTS (5%)					**$ 172,000**	
CONTINGENGY (20%)					**$ 687,000**	
TOTAL PROJECT COST (CREDIT)					**$ 4,294,000**	**$ (2,501,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 1,793,000**	

Table B-8
Mustang Solar
Solar Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Mustang Solar						
Unit 1						
Substation	$ 3,000	$ 1,000	$ -	$ -	$ 4,000	$ -
Solar Panel Removal/Recycling	$ 48,000	$ 14,000	$ 10,000	$ -	$ 72,000	$ -
Solar Panel Support	$ 28,000	$ 8,000	$ -	$ -	$ 36,000	$ -
Cables and Wires	$ 19,000	$ 6,000	$ -	$ -	$ 25,000	$ -
Transformer and Inverter Block	$ 5,000	$ 2,000	$ -	$ -	$ 7,000	$ -
Perimeter Fence Removal	$ 13,000	$ 4,000	$ -	$ -	$ 17,000	$ -
Site Restoration	$ -	$ -	$ -	$ 62,000	$ 62,000	$ -
On-site Concrete Crushing and Removal	$ -	$ -	$ 1,000	$ -	$ 1,000	$ -
Debris	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (161,000)
Subtotal	**$ 116,000**	**$ 35,000**	**$ 13,000**	**$ 62,000**	**$ 226,000**	**$ (161,000)**
Mustang Solar Subtotal	**$ 116,000**	**$ 35,000**	**$ 13,000**	**$ 62,000**	**$ 226,000**	**$ (161,000)**
TOTAL DECOM COST (CREDIT)					**$ 226,000**	**$ (161,000)**
PROJECT INDIRECTS (5%)					**$ 11,000**	
CONTINGENGY (20%)					**$ 45,000**	
TOTAL PROJECT COST (CREDIT)					**$ 282,000**	**$ (161,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 121,000**	

Table A-1
OU Spirit
Decommissioning Cost Summary

	Total Cost	Scrap Value
OU Spirit		
Wind Turbine & Foundation Removal Cost		
Nacelle, Tower, & Electrical Removal	$ 1,876,000	$ -
Blade & Foundation Removal	$ 1,175,000	$ -
Hauling	$ -	$ -
Disposal	$ 397,000	$ -
Scrap	$ -	$ (4,025,000)
Subtotal	**$ 3,448,000**	**$ (4,025,000)**
Met Tower and Foundation Removal Cost		
Tower & Foundation Removal	$ -	$ -
Hauling	$ -	$ -
Disposal	$ -	$ -
Scrap	$ -	$ -
Subtotal	**$ -**	**$ -**
Mobilization & Demobilization		
Mobilization/Demobilization	$ 50,000	$ -
Subtotal	**$ 50,000**	**$ -**
Substation Removal Cost		
Above Ground Equipment Removal	$ 84,000	$ -
Above Ground Equipment Hauling	$ -	$ -
Demolition (Foundations, Fencing, Crushed Rock Removal)	$ 58,000	$ -
Demolition Hauling	$ -	$ -
Disposal	$ 38,000	$ -
Scrap	$ -	$ (143,000)
Subtotal	**$ 180,000**	**$ (143,000)**
O&M Facility Building Removal Cost		
Building & Foundation Demolition	$ 30,000	$ -
Fencing and Crushed Rock Surface Removal	$ 10,000	$ -
Hauling	$ 1,000	$ -
Disposal	$ 13,000	$ -
Scrap	$ -	$ (2,000)
Subtotal	**$ 54,000**	**$ (2,000)**
Transmission Line Removal Cost		
Conductor and Tower Removal	$ -	$ -
Foundation Demolition	$ -	$ -
Hauling	$ -	$ -
Disposal	$ -	$ -
Scrap	$ -	$ -
Total	**$ -**	**$ -**
Crushed Rock Road Surface Removal Cost		
Surfacing Removal	$ 209,000	$ -
Hauling	$ -	$ -
Disposal	$ -	$ -
Scrap	$ -	$ -
Subtotal	**$ 209,000**	**$ -**
Environmental Cost		
Hazardous Material Removal & Disposal	$ 35,000	$ -
Grading and Seeing	$ 140,000	$ -
Subtotal	**$ 175,000**	**$ -**
OU Spirit Subtotal	**$ 4,116,000**	**$ (4,170,000)**
TOTAL DECOM COST (CREDIT)	**$ 4,116,000**	**$ (4,170,000)**
PROJECT INDIRECTS (5%)	**$ 206,000**	
CONTINGENCY (20%)	**$ 823,000**	
TOTAL PROJECT COST (CREDIT)	**$ 5,145,000**	**$ (4,170,000)**
TOTAL NET PROJECT COST (CREDIT)	**$ 975,000**	

Table B-10
Redbud
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Redbud						
Unit 1						
CTs and HRSGs	$ 767,000	$ 866,000	$ -	$ -	$ 1,633,000	$ -
Steam Turbine & Building	$ 465,000	$ 525,000	$ -	$ -	$ 990,000	$ -
SCR	$ 30,000	$ 34,000	$ -	$ -	$ 64,000	$ -
Cooling Towers & Circulating Water	$ 130,000	$ 147,000	$ -	$ 5,000	$ 282,000	$ -
Stacks	$ 33,000	$ 38,000	$ -	$ -	$ 71,000	$ -
GSU & Foundation	$ 50,000	$ 57,000	$ -	$ -	$ 107,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 47,000	$ -	$ 47,000	$ -
Debris	$ -	$ -	$ 17,000	$ -	$ 17,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (2,004,000)
Subtotal	**$ 1,475,000**	**$ 1,667,000**	**$ 64,000**	**$ 5,000**	**$ 3,211,000**	**$ (2,004,000)**
Unit 2						
CTs and HRSGs	$ 767,000	$ 866,000	$ -	$ -	$ 1,633,000	$ -
Steam Turbine & Building	$ 465,000	$ 525,000	$ -	$ -	$ 990,000	$ -
SCR	$ 30,000	$ 34,000	$ -	$ -	$ 64,000	$ -
Cooling Towers & Circulating Water	$ 130,000	$ 147,000	$ -	$ 6,000	$ 283,000	$ -
Stacks	$ 33,000	$ 38,000	$ -	$ -	$ 71,000	$ -
GSU & Foundation	$ 50,000	$ 57,000	$ -	$ -	$ 107,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 47,000	$ -	$ 47,000	$ -
Debris	$ -	$ -	$ 17,000	$ -	$ 17,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (2,004,000)
Subtotal	**$ 1,475,000**	**$ 1,667,000**	**$ 64,000**	**$ 6,000**	**$ 3,212,000**	**$ (2,004,000)**
Unit 3						
CTs and HRSGs	$ 767,000	$ 866,000	$ -	$ -	$ 1,633,000	$ -
Steam Turbine & Building	$ 465,000	$ 525,000	$ -	$ -	$ 990,000	$ -
SCR	$ 30,000	$ 34,000	$ -	$ -	$ 64,000	$ -
Cooling Towers & Circulating Water	$ 130,000	$ 147,000	$ -	$ 4,000	$ 281,000	$ -
Stacks	$ 33,000	$ 38,000	$ -	$ -	$ 71,000	$ -
GSU & Foundation	$ 50,000	$ 57,000	$ -	$ -	$ 107,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 47,000	$ -	$ 47,000	$ -
Debris	$ -	$ -	$ 17,000	$ -	$ 17,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (2,004,000)
Subtotal	**$ 1,475,000**	**$ 1,667,000**	**$ 64,000**	**$ 4,000**	**$ 3,210,000**	**$ (2,004,000)**
Unit 4						
CTs and HRSGs	$ 767,000	$ 866,000	$ -	$ -	$ 1,633,000	$ -
Steam Turbine & Building	$ 465,000	$ 525,000	$ -	$ -	$ 990,000	$ -
SCR	$ 30,000	$ 34,000	$ -	$ -	$ 64,000	$ -
Cooling Towers & Circulating Water	$ 130,000	$ 147,000	$ -	$ 4,000	$ 281,000	$ -
Stacks	$ 33,000	$ 38,000	$ -	$ -	$ 71,000	$ -
GSU & Foundation	$ 50,000	$ 57,000	$ -	$ -	$ 107,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 47,000	$ -	$ 47,000	$ -
Debris	$ -	$ -	$ 17,000	$ -	$ 17,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (2,004,000)
Subtotal	**$ 1,475,000**	**$ 1,667,000**	**$ 64,000**	**$ 4,000**	**$ 3,210,000**	**$ (2,004,000)**
Common						
Switchgear & Electrical	$ 19,000	$ 22,000	$ -	$ -	$ 41,000	$ -
Aux Boiler	$ 6,000	$ 7,000	$ -	$ -	$ 13,000	$ -
Cooling Water Intakes and Circulating Water Pumps	$ 66,000	$ 75,000	$ -	$ -	$ 141,000	$ -
BOP Miscellaneous	$ 24,000	$ 27,000	$ -	$ -	$ 51,000	$ -
All BOP Buildings	$ 225,000	$ 254,000	$ -	$ -	$ 479,000	$ -
All Other Tanks	$ 55,000	$ 62,000	$ -	$ -	$ 117,000	$ -
Mercury & Universal Waste Disposal	$ -	$ -	$ -	$ 21,000	$ 21,000	$ -
Transformer Oil Disposal	$ -	$ -	$ -	$ 128,000	$ 128,000	$ -
Concrete Removal, Crushing, & Disposal	$ -	$ -	$ 18,000	$ -	$ 18,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 1,019,000	$ 1,019,000	$ -
Debris	$ -	$ -	$ 5,000	$ -	$ 5,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (281,000)
Subtotal	**$ 395,000**	**$ 447,000**	**$ 23,000**	**$ 1,242,000**	**$ 2,107,000**	**$ (281,000)**
Redbud Subtotal	**$ 6,295,000**	**$ 7,115,000**	**$ 279,000**	**$ 1,261,000**	**$ 14,950,000**	**$ (8,297,000)**
TOTAL DECOM COST (CREDIT)					**$ 14,950,000**	**$ (8,297,000)**
PROJECT INDIRECTS (5%)					**$ 748,000**	
CONTINGENGY (20%)					**$ 2,990,000**	
TOTAL PROJECT COST (CREDIT)					**$ 18,688,000**	**$ (8,297,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 10,391,000**	

Table B-11
Seminole
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Seminole						
Unit 1						
Asbestos Removal	$ -	$ -	$ -	$ 1,451,000	$ 1,451,000	$ -
Boiler	$ 2,332,000	$ 2,633,000	$ -	$ -	$ 4,966,000	$ -
Steam Turbine & Building	$ 1,325,000	$ 1,497,000	$ -	$ -	$ 2,822,000	$ -
Switchgear and Electrical	$ 10,000	$ 11,000	$ -	$ -	$ 21,000	$ -
Circulating Water	$ -	$ -	$ -	$ 12,000	$ 12,000	$ -
GSU & Foundation	$ 50,000	$ 57,000	$ -	$ -	$ 107,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 97,000	$ -	$ 97,000	$ -
Debris	$ -	$ -	$ 73,000	$ -	$ 73,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (4,180,000)
Subtotal	**$ 3,785,000**	**$ 4,275,000**	**$ 170,000**	**$ 1,463,000**	**$ 9,694,000**	**$ (4,180,000)**
Unit 2						
Asbestos Removal	$ -	$ -	$ -	$ 1,451,000	$ 1,451,000	$ -
Boiler	$ 2,324,000	$ 2,625,000	$ -	$ -	$ 4,949,000	$ -
Steam Turbine & Building	$ 1,325,000	$ 1,497,000	$ -	$ -	$ 2,822,000	$ -
Switchgear and Electrical	$ 10,000	$ 11,000	$ -	$ -	$ 21,000	$ -
Circulating Water	$ -	$ -	$ -	$ 10,000	$ 10,000	$ -
GSU & Foundation	$ 54,000	$ 61,000	$ -	$ -	$ 114,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 97,000	$ -	$ 97,000	$ -
Debris	$ -	$ -	$ 73,000	$ -	$ 73,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (4,168,000)
Subtotal	**$ 3,781,000**	**$ 4,271,000**	**$ 170,000**	**$ 1,461,000**	**$ 9,682,000**	**$ (4,168,000)**
Unit 3						
Asbestos Removal	$ -	$ -	$ -	$ 1,451,000	$ 1,451,000	$ -
Boiler	$ 2,395,000	$ 2,704,000	$ -	$ -	$ 5,098,000	$ -
Steam Turbine & Building	$ 1,325,000	$ 1,497,000	$ -	$ -	$ 2,822,000	$ -
Switchgear and Electrical	$ 10,000	$ 11,000	$ -	$ -	$ 21,000	$ -
Stacks	$ 181,000	$ 204,000	$ -	$ -	$ 385,000	$ -
Circulating Water	$ -	$ -	$ -	$ 9,000	$ 9,000	$ -
GSU & Foundation	$ 54,000	$ 61,000	$ -	$ -	$ 115,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 126,000	$ -	$ 126,000	$ -
Debris	$ -	$ -	$ 292,000	$ -	$ 292,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (4,141,000)
Subtotal	**$ 3,965,000**	**$ 4,477,000**	**$ 418,000**	**$ 1,460,000**	**$ 10,319,000**	**$ (4,141,000)**
Common						
Water Treatment Equipment and Piping	$ 111,000	$ 126,000	$ -	$ -	$ 237,000	$ -
All BOP Buildings	$ 190,000	$ 215,000	$ -	$ -	$ 405,000	$ -
Fuel Equipment	$ 166,000	$ 187,000	$ -	$ -	$ 353,000	$ -
All Other Tanks	$ 18,000	$ 20,000	$ -	$ -	$ 38,000	$ -
GSU & Foundation	$ 5,000	$ 5,000	$ -	$ -	$ 10,000	$ -
Circulating Water	$ 111,000	$ 126,000	$ -	$ -	$ 237,000	$ -
Mercury & Universal Waste Disposal	$ -	$ -	$ -	$ 39,000	$ 39,000	$ -
Transformer Oil Disposal	$ -	$ -	$ -	$ 188,000	$ 188,000	$ -
Transformer Pad and Soil Removal	$ -	$ -	$ -	$ 58,000	$ 58,000	$ -
Soil Remediation Beneath Fuel Oil Tank	$ -	$ -	$ -	$ 141,000	$ 141,000	$ -
Fuel Oil Tank Cleaning	$ -	$ -	$ -	$ 1,259,000	$ 1,259,000	$ -
Fuel Oil Line Flushing/Cleaning	$ -	$ -	$ -	$ 9,000	$ 9,000	$ -
Pond Closures	$ -	$ -	$ -	$ 819,000	$ 819,000	$ -
Concrete Removal, Crushing, & Disposal	$ -	$ -	$ 18,000	$ -	$ 18,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 423,000	$ 423,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (418,000)
Subtotal	**$ 601,000**	**$ 679,000**	**$ 20,000**	**$ 2,936,000**	**$ 4,236,000**	**$ (418,000)**
Subtotal	**$ 12,132,000**	**$ 13,702,000**	**$ 778,000**	**$ 7,320,000**	**$ 33,931,000**	**$ (12,907,000)**
TOTAL DECOM COST (CREDIT)					**$ 33,931,000**	**$ (12,907,000)**
PROJECT INDIRECTS (5%)					**$ 1,697,000**	
CONTINGENGY (20%)					**$ 6,786,000**	
TOTAL PROJECT COST (CREDIT)					**$ 42,414,000**	**$ (12,907,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 29,507,000**	

Table B-12
Sooner
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Sooner						
Unit 1						
Asbestos Removal	$ -	$ -	$ -	$ 2,258,000	$ 2,258,000	$ -
Boiler	$ 2,367,000	$ 2,673,000	$ -	$ -	$ 5,040,000	$ -
Steam Turbine & Building	$ 1,441,000	$ 1,627,000	$ -	$ -	$ 3,068,000	$ -
Precipitator	$ 579,000	$ 654,000	$ -	$ -	$ 1,233,000	$ -
Switchgear and Electrical	$ 10,000	$ 11,000	$ -	$ -	$ 21,000	$ -
Scrubber / FGD	$ 321,000	$ 362,000	$ -	$ -	$ 683,000	$ -
Stacks	$ 216,000	$ 244,000	$ -	$ -	$ 460,000	$ -
Circulating Water	$ -	$ -	$ -	$ 21,000	$ 21,000	$ -
GSU & Foundation	$ 85,000	$ 96,000	$ -	$ -	$ 181,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 163,000	$ -	$ 163,000	$ -
Debris	$ -	$ -	$ 421,000	$ -	$ 421,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (7,866,000)
Subtotal	**$ 5,019,000**	**$ 5,667,000**	**$ 584,000**	**$ 2,279,000**	**$ 13,549,000**	**$ (7,866,000)**
Unit 2						
Asbestos Removal	$ -	$ -	$ -	$ 2,258,000	$ 2,258,000	$ -
Boiler	$ 2,367,000	$ 2,673,000	$ -	$ -	$ 5,040,000	$ -
Steam Turbine & Building	$ 1,417,000	$ 1,600,000	$ -	$ -	$ 3,017,000	$ -
Precipitator	$ 579,000	$ 654,000	$ -	$ -	$ 1,233,000	$ -
Switchgear and Electrical	$ 10,000	$ 11,000	$ -	$ -	$ 21,000	$ -
Scrubber / FGD	$ 311,000	$ 351,000	$ -	$ -	$ 662,000	$ -
Stacks	$ 216,000	$ 244,000	$ -	$ -	$ 460,000	$ -
Circulating Water	$ -	$ -	$ -	$ 20,000	$ 20,000	$ -
GSU & Foundation	$ 86,000	$ 97,000	$ -	$ -	$ 183,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 162,000	$ -	$ 162,000	$ -
Debris	$ -	$ -	$ 421,000	$ -	$ 421,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (6,578,000)
Subtotal	**$ 4,986,000**	**$ 5,630,000**	**$ 583,000**	**$ 2,278,000**	**$ 13,477,000**	**$ (6,578,000)**
Handling						
Coal Handling Facilities	$ 548,000	$ 619,000	$ -	$ -	$ 1,167,000	$ -
Rail Spur Removal	$ 433,000	$ 489,000	$ -	$ -	$ 922,000	$ -
Limestone Handling Facilities	$ 20,000	$ 23,000	$ -	$ -	$ 43,000	$ -
Coal Pile Remediation	$ -	$ -	$ -	$ 8,200,000	$ 8,200,000	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 6,000	$ -	$ 6,000	$ -
Debris	$ -	$ -	$ 311,000	$ -	$ 311,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (2,708,000)
Subtotal	**$ 1,001,000**	**$ 1,131,000**	**$ 317,000**	**$ 8,200,000**	**$ 10,649,000**	**$ (2,708,000)**
Common						
All BOP Buildings	$ 371,000	$ 419,000	$ -	$ -	$ 790,000	$ -
Fuel Equipment	$ 60,000	$ 68,000	$ -	$ -	$ 128,000	$ -
GSU & Foundation	$ 20,000	$ 22,000	$ -	$ -	$ 42,000	$ -
Circulating Water	$ 60,000	$ 67,000	$ -	$ -	$ 127,000	$ -
Mercury & Universal Waste Disposal	$ -	$ -	$ -	$ 51,000	$ 51,000	$ -
Plant Wash Down & Disposal	$ -	$ -	$ -	$ 73,000	$ 73,000	$ -
Transformer Oil Disposal	$ -	$ -	$ -	$ 195,000	$ 195,000	$ -
Transformer Pad and Soil Removal	$ -	$ -	$ -	$ 25,000	$ 25,000	$ -
Soil Remediation Beneath Fuel Oil Tank	$ -	$ -	$ -	$ 43,000	$ 43,000	$ -
Concrete Removal, Crushing, & Disposal	$ -	$ -	$ 33,000	$ -	$ 33,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 1,033,000	$ 1,033,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (196,000)
Subtotal	**$ 511,000**	**$ 576,000**	**$ 33,000**	**$ 1,420,000**	**$ 2,540,000**	**$ (196,000)**
Sooner Subtotal	**$ 11,517,000**	**$ 13,004,000**	**$ 1,517,000**	**$ 14,177,000**	**$ 40,215,000**	**$ (17,348,000)**
TOTAL DECOM COST (CREDIT)					**$ 40,215,000**	**$ (17,348,000)**
PROJECT INDIRECTS (5%)					**$ 2,011,000**	
CONTINGENGY (20%)					**$ 8,043,000**	
TOTAL PROJECT COST (CREDIT)					**$ 50,269,000**	**$ (17,348,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 32,921,000**	

Table B-13
Tinker
Decommissioning Cost Summary

	Labor	Material and Equipment	Disposal	Environmental	Total Cost	Scrap Value
Tinker						
CTs 5A & 5B						
Asbestos Removal	$ -	$ -	$ -	$ 6,000	$ 6,000	$ -
Turbines & Foundations	$ 230,000	$ 260,000	$ -	$ -	$ 490,000	$ -
GSUs	$ 7,000	$ 8,000	$ -	$ -	$ 15,000	$ -
Stack	$ -	$ -	$ -	$ -	$ -	$ -
On-site Concrete Crushing & Disposal	$ -	$ -	$ 4,000	$ -	$ 4,000	$ -
Debris	$ -	$ -	$ 1,000	$ -	$ 1,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (473,000)
Subtotal	**$ 237,000**	**$ 268,000**	**$ 5,000**	**$ 6,000**	**$ 516,000**	**$ (473,000)**
Common						
Water Treatment Equipment and Piping	$ 2,000	$ 3,000	$ -	$ -	$ 5,000	$ -
All BOP Buildings	$ 9,000	$ 10,000	$ -	$ -	$ 19,000	$ -
Fuel Equipment	$ 24,000	$ 27,000	$ -	$ -	$ 51,000	$ -
All Other Tanks	$ 5,000	$ 6,000	$ -	$ -	$ 11,000	$ -
Switchgear & Electrical	$ 5,000	$ 5,000	$ -	$ -	$ 10,000	$ -
Mercury & Universal Waste Disposal	$ -	$ -	$ -	$ 12,000	$ 12,000	$ -
Transformer Oil Disposal	$ -	$ -	$ -	$ 11,000	$ 11,000	$ -
Transformer Pad and Soil Removal	$ -	$ -	$ -	$ 1,000	$ 1,000	$ -
Soil Remediation Beneath Fuel Oil Tank	$ -	$ -	$ -	$ 5,000	$ 5,000	$ -
Fuel Oil Tank Cleaning	$ -	$ -	$ -	$ 10,000	$ 10,000	$ -
Fuel Oil Line Flushing/Cleaning	$ -	$ -	$ -	$ 1,000	$ 1,000	$ -
Grading & Seeding	$ -	$ -	$ -	$ 137,000	$ 137,000	$ -
Scrap	$ -	$ -	$ -	$ -	$ -	$ (40,000)
Subtotal	**$ 45,000**	**$ 51,000**	**$ -**	**$ 177,000**	**$ 273,000**	**$ (40,000)**
Tinker Subtotal	**$ 282,000**	**$ 319,000**	**$ 5,000**	**$ 183,000**	**$ 789,000**	**$ (513,000)**
TOTAL DECOM COST (CREDIT)					**$ 789,000**	**$ (513,000)**
PROJECT INDIRECTS (5%)					**$ 39,000**	
CONTINGENGY (20%)					**$ 158,000**	
TOTAL PROJECT COST (CREDIT)					**$ 986,000**	**$ (513,000)**
TOTAL NET PROJECT COST (CREDIT)					**$ 473,000**	

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