

APPENDIX H
RESPONSES TO COMMENTS ON THE PUBLIC REVIEW ENVIRONMENTAL
ASSESSMENT

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THE NAVAJO NATION, OFFICE OF SURFACE MINING

Comment 1

Gilbert Becenti, Reclamation Specialist

Reference made to: “2012 EA, with the exception of correcting the actual amount of coal mined and combusted at FCPP.” Is this document a modification of the stated document for 2012 or is this a separate NEPA document? The background information provided, stated that several federal actions were completed. My question is why the same purpose and need is stated in this document when it’s all completed? Are there additional federal action needed, regarding USACE, BIA and BLM as mentioned in Chapter 1?

Response

This reference is actually on page 31, not pages 1-2. The 2012 EA was vacated on March 3, 2015, meaning that it no longer exists. Thus, this current EA provides the analysis for the proposed action, required to comply with NEPA. Because the 2012 EA was assumed to be valid for approximately 3 years, some (but not all) of the actions analyzed in that EA had already been implemented. No additional federal actions are required that were not completed for the 2012 vacated EA.

Comment 2

Gilbert Becenti, Reclamation Specialist

OSMRE’s Statement of Project Purpose is similar to a proposed action alternative and also mention reroute of Burnham Road. Is the road decision already made and authorization completed, unless there is another road relocation decision and impacts needs disclosure in this EA? Should the need to meet a company contractual obligations be part of this purpose, as it may be viewed as biased justification of the proposed action alternative for a responsible official decision and FONSI?

Response

There is no new Burnham Road reroute as a part of this particular action – it is one of the items described above that has been completed. (Not to be confused with the Burnham Road section that was proposed for realignment under the FCPP & NM EIS). The Purpose & Need by the Proponent is accurately described, and in no way imposes biased justification for the decision.

Comment 3

Gilbert Becenti, Reclamation Specialist

Project benefit mention in section 1.7.6 would also benefit local and adjacent communities of Shiprock and Farmington, not only the Nation.

Response

It is true that project benefits would go to local communities as well, and that is described in the consequences section (see Section 4.10); however, that is not a part of the overall purpose and need.

Comment 4

Gilbert Becenti, Reclamation Specialist

There is considerable amount of background information in Chapter 1, however, is there, a proposed action which summarize OSMRE's federal action? There is several reference made to Area III. Is Area III part of the proposed action (additional federal action)?

Response

The fact that this is a new EA based on a vacated EA had the potential to be confusing to the reader. Much effort is devoted in Chapter 1 to clarifying the action to the reader. The Proposed Action is summarized in Section 2.1.1. The Proposed Action includes: a) BNCC (and subsequently, NTEC's) proposed pre-2016 mine plan revision; b) consolidation of all Navajo Mine NWP's into a single IP; c) the proposed R2P2; and d) realignment of the Burnham Road. Area III is not a part of the Proposed Action with the exception of realignment of Burnham Road. Other references to Area III are only in reference to the background of the mine.

Comment 5

Gilbert Becenti, Reclamation Specialist

Is all the issues identified in section 1.8 and table 1.8-1 associated with OSMRE's proposed federal action or is it beyond the intent of this site specific proposed action. Will there be a separate discussion on which issues will be analyze in depth in this report or eliminate from further study?

Response

These were the issues that were identified during the scoping process for the 2012 EA that was subsequently vacated in 2015. All the issues were considered in preparing the current EA, and no additional discussion is expected beyond that found in the EA.

Comment 6

Gilbert Becenti, Reclamation Specialist

Reference made that "*Project Area refers to the area where the proposed activities would occur including areas to be mined in Area III, areas proposed to be mined in Area IV North, associated mine activity related to these mining activities (e.g., train operations, haul trucks, etc., that occur in Areas I, II, III, and IV North) and the Burnham Road realignment (approved in 2012 and completed).*" Is Area III part of federal proposed action, when Chapter 2 propose action only mention "*Authorize a revised mine plan on 830 acres within Area IV North, mining 704 acres*". Has the mining activities impacts in Area III been disclosed in prior NEPA analysis, mining plan accepted and authorized?

Response

No, Area III is not a part of this action; however, Area III does have on-going mining, and as such it is described in the baseline section. On-going mining in Area III has been previously analyzed under the National Environmental Policy Act.

Comment 7

Gilbert Becenti, Reclamation Specialist

Reference made that "*Relevant to the description of the Affected Environment is that this EA is being prepared in response to the vacatur of the 2012 EA/FONSI by the Colorado District Court, which in turn followed a March 2, 2015 decision by the District Court ruling that OSMRE failed to adequately consider*

the reasonably foreseeable combustion-related effects of NTECs proposed expansion of operations at the Navajo Mine.” Is this part of OSMRE’s purpose of and need section in Chapter 1?

Response

No, the purpose remains as previously described in the 2012 EA, and as described in Section 1.7; however, the EA is being prepared again as a result of the vacatur.

Comment 8

Gilbert Becenti, Reclamation Specialist

Reference made that “*Federal protection for paleontological resources stems from the Antiquities Act of 1906 (Public Law [PL] 59-209; 16 USC 431 et seq.) and the Paleontological Resources Preservation Act of 2009, which requires protection of historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest, including paleontological resources on Federally-administered lands.” What is NTEC proposal to deal with paleontological resources under their requested and proposed mining plan revision and do we need additional mitigation measures in this EA?*

Response

The Navajo Nation retains ownership of all paleontological resources. From the paleontological resource information gathered during the inventory, MMCo in consultation with the Navajo Nation Minerals Department developed the Paleontological Resources Management Plan (PRMP) to document and protect known and previously unknown paleontological resources within the Navajo Mine Lease Area. The paleontological inventory identified two significant localities (53 and 88) located within Area IV North and thus require further management actions.

Comment 9

Gilbert Becenti, Reclamation Specialist

Reference also made that “*While the Navajo Nation does not have a written policy for dealing with paleontological resources on their lands, these resources are generally administered in accord with the principles and recommendations of the Assessment of Fossil Management on Federal and Indian Lands (DOI 2000).*” Is the stated acts and federal policies and regulation (federally administered land –DOI) adequate or not? Is DOI 2000 available for public access and review?

Response

Yes, DOI 2000 is available on-line, and can be found at this link: <https://www.nature.nps.gov/geology/paleontology/Publications/FOSSIL%20REPORT%20TO%20CONGRESS.pdf>. There is also an inadvertent discoveries plan as part of the condition of the Navajo Mine SMCRA permit.

Comment 10

Gilbert Becenti, Reclamation Specialist

What are the site specific affected to soil for Area IV, specific amount of top dressing material within the proposed area? How much area is considered Badlands and Natragrids as mentioned in affected soil section of this report? What are the COPECs impacts to soil as vegetation COPECs was provided in vegetation section?

Response

The Area IV North mine plan revision forecasts annual removal of approximately 280,000 cubic yards of vegetation and topdressing from Area IV North.

Results of BNCC's soil surveys classify soils into Badlands, Natragrids, and potential topdressing sources. The three types of material each cover approximately one-third of the geological resource assessment area (33 percent each).

Comment 11

Gilbert Becenti, Reclamation Specialist

Reference made that *"The proposed action can have many environmental consequences if approved"*. What would be the impacts as related to combustion-related effect of coal within Area IV and other issues mentioned in Chapter 1, section 1.8 and Table 1.8-1?

Response

Impacts to air quality are addressed in detail in Section 4.5.2.1.

Comment 12

Gilbert Becenti, Reclamation Specialist

Reference made that *"Soils suitable for use as topdressing would be either immediately transported to reclamation areas or salvaged and stockpiled for later use"*. What's the available amount of topdressing materials in Area IV and amount of topdressing needs for Area IV reclamation?

Response

This information is a part of the SMCRA permit, which can be found on the OSMRE website. If you need assistance finding it, please contact Mychal Yellowman.

Comment 13

Gilbert Becenti, Reclamation Specialist

Where is the "Navajo Mine Spill Prevention Control and Countermeasure Plan" for access and review?

Response

Where is the "Navajo Mine Spill Prevention Control and Countermeasure Plan" for access and review?

Comment 14

Gilbert Becenti, Reclamation Specialist

The report states *"long-term positive impacts on soils. The establishment of vegetation consistent with the post-mining land use of grazing would result in a higher percent of vegetative cover, improving soil stability, reducing soil loss and increasing productivity over pre-mining conditions (BNCC 2011)."* What are the quantifiable, site specific long-term and positive soil impacts of Area IV, as compared to pre-mining condition and completed reclaimed area within the Navajo Mine, including the amount of increase in vegetative cover, soil stability, soil loss and increase in productivity? Would there be any negative impacts, how much and is there any mitigation?

Response

Please see BNCC 2011, Navajo Mine Permit Number NM 0003F-R-03; Rev 1105 Area IIV North Mine Plan Resubmittal. BHP Navajo Coal Company.

Comment 15

Gilbert Becenti, Reclamation Specialist

Reference made that “*construction of Burnham Road and This long-term disturbance would impact approximately 23 acres*”. What is the actual 23 acres, long term disturbance? Would this be earthen or gravel road? What would be the maintenance level, and type of road for a stable road? Would there be any dust abatement for this road? What’s the ROW specification authorized, term and condition from the BIA?

Response

The Burnham Road realignment design complies with BIA standards and includes safety features for curves and slopes. Culverts, guardrails, and drop structures were incorporated into the design to provide for public safety and environmental benefits. The completed road realignment is a 24-foot wide, graveled, two-lane road with 6-foot wide shoulders, for a total width of 36 feet. The fill slopes are 4:1 (horizontal:vertical) except in areas with guardrails where the fill slopes are 2:1. The cut slopes are 3:1. All cut and fill slopes 2:1 or steeper received erosion control matting. In cut sections, drainage ditches were constructed to divert storm runoff water away from the road. The road is surfaced with an 8-inch layer of compacted gravel. Routine road maintenance consists of: (1) surface repairs, (2) blading of side ditches and roadway surfaces, (3) application of water or chemical road stabilizers to control dust, (4) maintaining drainage control structures to standards of engineered design, (5) and maintaining safety berms. Periodic inspections are conducted to insure proper maintenance and safe operating conditions.

KRISHNA BASKOTA

Comment 16

EA Appendix F Page 4

Black Mesa Mine supplies coal to Navajo Generating station in Page, AZ which has been shut down. (This statement is incorrect)

Response

Change the word “which” to “and”.

Comment 17

EA Chapter 1 (Plant Water Supply) Page 21

BBNMC holds water rights for this water use. Is this water rights transferred to NTEC or not?

Response

No it has not been transferred.

Comment 18

EA Chapter 3

(Page 70).The Final EPA rules regulates CCR as RCRA subtitle D Solid Waste. How is this rule going to affect CCR used for reclaiming Area 1 and some parts of Area II?

Comment 19

EA Chapter 3

(Page 123). Table 3.5.4 does not show the constituents generated as a part of base line emission from the power plant.

Response

Table 3.5.4 shows emissions from Area III mining, Table 3.5.5 shows emissions from the power plant over a 12 year period.

Comment 20

EA Chapter 4 Page 414

Reclamation Plan of the Ash Disposal site at FCPP is not put forward under No Action alternative if the plant closes in 2016.

Response

This is incorporated by reference, and was not carried forward from the EIS. By reference: Management of existing ash disposal units would continue beyond the closure of the mine; in accordance with regulatory requirements, APS would prepare a closure plan for these units to be approved by EPA Region 9, OSMRE, and in cooperation with the NNEPA.

Comment 21

EA Chapter 5 Page 440

Similarly the installation of SCR at SJGS by 2016. This statement is incorrect. SJGS will be fitted with SNCR (Selective Non-Catalytic Reduction).

Response

A web search indicates that Krishna is correct.

Comment 22

Biological Assessment (Executive Summary).

(Page ES-1).OSMRE has prepared this Biological Assessment (BA) to determine the effects of combusting Area IV North coal at FCPP from September 1, 2015 through July 6, 2016. (Why not from 2012 when the mine started working Area IV N?)

Response

The potential effects on listed species that could result from the mining of Area IV North coal, as opposed to combusting that coal, under the Proposed Action were addressed in a prior Section 7 Consultation, and the U.S. Fish and Wildlife Service concurred with OSMRE's effects analysis (Not likely to adversely affect) in a letter dated January 19, 2012. OSMRE's determination was not at issue in the litigation and thus these effects are not readdressed in this BA.

Comment 23

Biological Assessment (Executive Summary)

(Page ES-5). There will be no effects from FCPP emissions on the species during the Proposed Action's term, *i.e.*, September 1, 2015, through July 6, 2016. While mercury and selenium may be deposited in the Action Area from FCPP's combustion of Area IV North coal during the period of this Proposed Action, the biological effects of mercury and selenium deposition on the endangered fish will not occur until after January 1, 2016. (Why effects won't occur until after Jan. 1 2016?)

Response

Because it is not an immediate effect. See EPRI 2013.

THE NAVAJO NATION

Comment 24

Karmen Billey, Environmental Engineer

Section 1.3.7 Final Ruling on Disposal of Coal Combustion Residual (CCR): "Coal Combustion Byproduct (CCB) disposal is not included in NTEC request approval in 2012 EA." What are the future alternative in disposal method plans from FCPP, if CCB is not included?

Response

APS is responsible for and manages the disposal of all CCB material generated at its facility. APS's handling of regulated according to EPAs final CCR rule of 2014. Trucks transport the dry fly ash to a lined DFADA on site for disposal.

Comment 25

Karmen Billey, Environmental Engineer

Section 1.5.4 Plant Water Supply (pg. 21): The recent San Juan River affects from the upstream watershed contaminates, does this have an effect on the FCPP use of water?

Response

No.

Comment 26

Karmen Billey, Environmental Engineer

Section 1.5.6.2.5 DFAPA Sites 1 and 2 (pg. 24): "Both sites (1 & 2) are projected to reach capacity by 2016." What are the alternative plans once the capacities are reached in 2016?

Response

This was addressed in the FCPP & NM EIS. New DFADAs would be constructed to accommodate additional CCR.

Comment 27

Karmen Billey, Environmental Engineer

Section 2.1.2 Proposed Action with Additional Condition: This section I believe is addressing some of the concern that might be mention in regards to the Stream Protection Rule, where supplementary hydrologic monitoring is being conducted at Navajo Mine (within permit boundaries). Are hydrologic monitoring currently being considered for off permit boundaries?

Response

This is an additional alternative, and is not considered the preferred alternative. Yes, monitoring would be conducted both on and off-permit area under this alternative.

Comment 28

Karmen Billey, Environmental Engineer

Section 2.1.4 No Action Alternative: "Area IV North mining has been ceased and would not start up again. Remaining coal in Area IV North would not be mined." Are reclamation planning currently being mentioned if Area IV North is being ceased? The current coal fires within Gilmore pit, how are they to be addressed?

Comment 29

Karmen Billey, Environmental Engineer

"Table 3.5-2 Categories of Area III Emission Sources." This table is blank. Information needs to be placed in table or the whole table needs to be eliminated.

Response

It appears that the table did not pdf correctly. Information in the table is as follows:

- Overburden Drilling and Blasting
- Coal Seam Drilling and Blasting
- Overburden Dragline Stripping
- Mine Extraction Operations and Loading
- Coal Haul Truck to Stockpiles
- Unloading at Stockpile and Railcar Loading
- Plant Vehicle Travel
- Wind Erosion – Soil/Overburden Spoil Pile
- Wind Erosion – Coal Stockpile
- Reclamation – Mine Pit Backfilling, Grading, and Topdressing
- Preparation Plant

Comment 30

Karmen Billey, Environmental Engineer

Table 3.5-4 Estimated Annual Baseline Emissions for Area III." The column just states "Emission Source Category," there might be missing information regarding the particular emission category the information is referring to.

Response

All the appropriate data appears to be in the table.

WESTERN ENVIRONMENTAL LAW CENTER

Comment 31

Shiloh Hernandez, Staff Attorney

OSMRE also readily admits the Proposed action of the series of EAs on Navajo Mine has now changed to account for the fact that there is no longer a 2016 deadline on using the Area IV coal due to the closure of Units 1-3 at FCPP. In fact, the Revised EA states, Consequently, the volume of coal to be mined in Area IV North under this Proposed Action was evaluated in the 2012 EA because with the operation of Units 1-5, that volume would have been combusted by 2016; the same mining related effects are also analyzed in this EA. However, with the reduction in combustion rate, that volume of coal will now be used beyond July 6, 2016. Based on the current mine plan, it is estimated that it will require approximately 4 years to complete coal recovery in Area IV North (which would be conducted concurrent with mining activities in the Pinabete area beginning in 2016)... (underlined for emphasis) (revised EA 2015, Page 4).

Therefore, OSMRE has now arbitrarily and capriciously extended the analysis purported to be the Proposed Action the Revised EA from a time frame to 2019-2020.

Response

The EA has been prepared to add analysis to that provided in the original 2012 EA, as required by the District Court Remand. As discussed at length in Section 1.2 of the 2015 EA (*Relevant Timelines*) the analysis period for both the 2012 and 2015 EA is to the end of the current coal supply agreement period (July 2016). Mining activities conducted after the 2016 Coal Supply Agreement are associated with a new and different coal supply agreement. The total volume of coal mined and combusted during the period of mine and power plant operations to meet that agreement (2016-2041) was the subject of the FCPP/NMEP EIS. Any remaining coal from Area IV North that would be combusted after July 2016 is directly considered in the FCPP/NMEP EIS. OSMRE selected July 6, 2016, as the time period for the Proposed Action for new analysis of combustion-related impacts not already presented in the EIS, for two reasons:

- 1) The 2012 EA which was remanded by the Court analyzed the effects of mining at the Navajo Mine in Area IV North through July 6, 2016. The conclusions with regard to mining were not contested, and are unchanged from what is presented in the 2012 EA, and therefore remain valid. They are carried forward in the 2015 EA. Thus, to be consistent with the remanded 2012 EA, OSMRE's EA considers operations through July 6, 2016, and incorporates by reference additional analysis beyond July 6, 2016 from the EIS.
- 2) The remand decision directed OSMRE to address the combustion-related impacts of the Proposed Action, which extends through July 6, 2016. The FCPP/NMEP EIS analyzed the combustion-related effects of burning Navajo Mine coal at FCPP, regardless of mining area source, commencing July 6, 2016 (as well as all

other effects of FCPP operations post-2016 through 2041). The FCPP/NMEP EIS comprehensively analyzed impacts from past, present, and future mine and power plant operations through 2041, including evaluating mercury and selenium deposition impacts, among other impacts, on threatened and endangered species, through and including the time period of the Area IV North Proposed Action. The Record of Decision issued on July 16, 2015, approved NTEC's renewal of the Navajo Mine SMCRA permit; while the FCPP & NMEP EIS fully analyzed Area IV North, the Record of Decision issued on July 16, 2015, approved NTEC's renewal of the Navajo Mine SMCRA permit, does not authorize on-going continued mining operations in Area IV North, pending the remand & vacatur.

The reasons for Area IV North coal being combusted after July 2016 are as follows. Between the 2012 EA and the 2015 EA, Arizona Public Service agreed to the US EPA's Federal Implementation Plan for BART that included shutdown of FCPP Units 1, 2, and 3 in December 2013. OSMRE's March 16, 2012 approval of the Area IV North permit revision used a coal supply rate of approximately 8.5 million tons of appropriate quality coal annually to FCPP. The closure of Units 1, 2, and 3 reduced the combustion rate of coal at the FCPP. Therefore, beginning on January 1, 2014, BNCC/NTEC began supplying approximately 5.8 million tons of appropriate quality coal annually to FCPP. The volume of coal to be mined in Area IV North under this Proposed Action was evaluated in the 2012 EA because with the operation of Units 1-5, that volume would have been combusted by 2016; the same mining-related effects are also analyzed in this EA. However, with the reduction in combustion rate, that volume of coal will now be used beyond July 6, 2016. Based on the current mine plan, it is estimated that it will require approximately 4 years to complete coal recovery in Area IV North, and an additional three to six months to blend the mined coal through Navajo Mine stockpiles and burn at the FCPP. Timing is predominantly impacted by the demand requirement of FCPP, the actual coal uncovered during the mining operations, and the appropriate blending for coal quality with other mined coal sources. This timing is based on Navajo Mine's estimated rates from the current long-term plan, and is subject to change based on the mine plan and sales forecast changes. The indirect effects of the combustion of the Area IV North coal that is blended with other mined coal sources after July 2016 was comprehensively analyzed in the FCPP/NMEP EIS. Therefore, although there is a change in the rate of coal combustion from that anticipated in the 2012 EA, all of the mining related effects and all of the combustion related effects from the Proposed Action at Area IV North are fully analyzed in compliance with NEPA. At the end of the Pinabete permit period (2041), there will have been less coal mined within the Pinabete area than was originally analyzed in the EIS to reflect the reduced demand prior to 2016.

Comment 32

Shiloh Hernandez, Staff Attorney

Of primary concern to Citizens Groups is OSMRE's attempt to incorporate by reference the FCPP/NMEP EIS into the Revised EA for the proposed Navajo Mine Area IV North Mine Plan. Citizens Groups formally incorporate by reference our comments and exhibits submitted to OSMRE on June 27, 2014 applicable to

the Revised EA for the proposed Navajo Mine Area IV North Mine Plan. Citizens Groups also formally incorporate by reference comments on the pre- 2016 Mine Plan for Area III and Area IV North EA #NM-0003-F-Y-01) submitted on January 17, 2012. Please confirm that these Citizen Group comments are incorporated by reference and included in the Administrative Record for this Revised EA 2015. The OSMRE desire to incorporate by reference the FCPP/NMEP EIS into the Revised EA for the proposed Navajo Mine Area IV North Mine Plan incorrectly attempts to tier the EA into EIS level analysis.

Response

The Court's remand decision noted that all parties agreed that OSMRE may be able to comply with NEPA relating to its consideration of the permit revision application by tiering to the comprehensive Environmental Impact Statement (EIS) for the Four Corners Power Plant and Navajo Mine Energy Project (FCPP/NMEP EIS), published May 1, 2015. Therefore, this EA tiers to and incorporates by reference relevant sections of the EIS, as noted in specific EA sections.

The purpose of Incorporation by Reference is to reduce the number of pages of a NEPA review while maintaining a comprehensive analysis (40 CFR 1502.21). DOI agencies are directed to make the best use of existing NEPA documents, including tiering and incorporating by reference previous NEPA analyses to avoid redundancy and unnecessary paperwork (43 CFR 46.120). Incorporation by reference must be identified, the relevant portions of the document being incorporated must be summarized, and the document must be available to reviewers (see 43 CFR 46.135). All of these provisions were met, and all effects comprehensively analyzed.

An EA prepared in support of an individual proposed action can be tiered to a programmatic or other broader-scope environmental impact statement such as the FCPP/NMEP EIS, as is this EA. A finding of no significant impact other than those already disclosed and analyzed in the EIS to which the EA is tiered may be called a "finding of no new significant impact" (43 CFR 46.140 (c)). Therefore, an EIS is not required and OSMRE has made a finding of no new significant impact. This finding is based on the context and intensity of the project as described in the FONNSI.

OSMRE notes the Citizen's Groups use of incorporation by reference of prior comments. Comments submitted by Citizen Groups on the 2012 EA were addressed prior to the March 16, 2012 approval of Area IV North. Those responses to comments can be found at: <http://www.wrcc.osmre.gov/initiatives/navajoMine/areaIVNorth.shtm>

Comment 33

Shiloh Hernandez, Staff Attorney

By attempting to circumvent significant impacts by incorporating by reference the FCPP/NMEP EIS into the Revised EA for the proposed Navajo Mine Area IV North Mine Plan, OSMRE shirks their responsibility where significant impacts warrant an EIS for the Navajo Mine Plan, due to the myriad of significant impacts raised by burning mined coal from Area IV through 2019-2020 (see Proposed Action). OSMRE continues to segment the Navajo Mine Area IV North impacts from legitimate analysis and limits the analysis of climate changes impacts in the Revised EA for the proposed Navajo Mine Area IV North Mine Plan to 2016, although the Proposed Action is now to allow Navajo Mine Area IV mining through 2019-2020. (see Revised EA 2015, page 342) This appears to be a mistake of OSMRE cutting and pasting from the earlier 2012 EA on Navajo Mine Area IV North. In addition, Chapter 4 of the Revised EA for the proposed Navajo

Mine Area IV North Mine Plan talks extensively about Area III of Navajo Mine—this should not even be included in this revised EA.

Response

The purpose of Incorporation by Reference is to reduce the number of pages of a NEPA review while maintaining a comprehensive analysis. Incorporation by reference must be identified, the relevant portions of the document being incorporated must be summarized, and the document must be available to reviewers. All of these provisions were met.

An EA prepared in support of an individual proposed action can be tiered to a programmatic or other broader-scope environmental impact statement such as the FCPP/NMEP EIS, as is this EA. A finding of no significant impact other than those already disclosed and analyzed in the EIS to which the EA is tiered may be called a “finding of no new significant impact” (43 CFR 46.140 (c)). Therefore, an EIS is not required and OSMRE has made a finding of no new significant impact. This finding is based on the context and intensity of the project as described in the FONNSI.

The Federal Register notice to the regulation goes further (73 FR 61292, 61300): “As contemplated in the preamble to the rule, and in response to favorable comments, the Department has added a new subsection clarifying that an environmental assessment may be prepared, and a finding of no significant impact reached, for a proposed action with significant effects, whether direct, indirect, or cumulative, if the environmental assessment is tiered to a broader environmental impact statement which fully analyzed those significant effects. Tiering to the programmatic or broader-scope environmental impact statement would allow the preparation of an environmental assessment and a finding of no significant impact for the individual proposed action, so long as any previously unanalyzed effects are not significant. The finding of no significant impact, in such circumstances, would be, in effect, a finding of no significant impact other than those already disclosed and analyzed in the environmental impact statement to which the environmental assessment is tiered. The finding of no significant impact in these circumstances may also be called a “finding of no new significant impact.” In addition, the provision requiring bureaus to review existing directives addressing tiering, and listing topics that must be included in such directives has been removed from the final rule as not appropriate for regulatory treatment.

The climate impacts are comprehensive for the analysis period of the EA, as described in the response to WELC comment 1 and comment 10.

Area III is not a part of this action; however, Area III does have on-going mining, and as such it is described in the baseline section. On-going mining in Area III has been previously analyzed under the National Environmental Policy Act, and provides coal that is blended with Area IV N coal, and therefore it is included in the revised EA.

Comment 34

Shiloh Hernandez, Staff Attorney

OSM cannot proceed on the basis of this revised EA (which has significantly altered the project timeline from a 2016 deadline to 2019-2020) and must, instead, complete a comprehensive EIS to account for myriad connected and cumulative actions, including the mine’s power plant, FCPP. FCPP is the mine’s sole customer, receives all of its fuel from the mine, and is simultaneously proceeding down a parallel track to secure approval from the Federal Bureau of Indian affairs to renew its lease (which currently ends in 2016)

through 2041. The statement of purpose and need should therefore be revised to account for the entire mine power plant complex, the Department of the Interior's full range of responsibilities pertaining to that complex (i.e., not just those of OSM, but also those of BIA) as well as the broader landscape that it is situated within and the broader communities that inhabit, value, and rely on this landscape. Revision of the purpose and need statement to include connected actions, requires OSM to revise its alternatives analysis. Since the purpose of the over-all mine-power plant project is generation of energy, OSM must consider other primary alternatives for energy production, such as replacing FCPP with renewable energy sources or gas. See *New Mexico ex rel. Richardson v. BLM*, 565 F.3d 683 (10th Cir. 2009). All reasonable foreseeable past, present and future impacts must be analyzed. OSMRE has not done that in the revised 2015 EA.

Response

The Colorado District Court ruled that OSMRE failed to adequately consider the reasonably foreseeable combustion-related effects of Navajo Transitional Energy Company's (NTEC's) proposed operations at the Navajo Mine. The EA includes a comprehensive analysis of the environmental effects of the mine-power plant complex, including tiering to and incorporating the FCPP/NMEP EIS analysis of post-2016 operations by reference (with clear summaries of the material being incorporated). The EA considered the combustion-related effects of the Proposed Action (the Mine Plan Revision). There are no actions proposed at the FCPP related to the Mine Plan revision (the FCPP would continue to operate), therefore the combustion-related effects are neither "connected actions" nor part of the proposed action. As such, no FCPP-related alternatives were considered. The FCPP/NMEP EIS, however, did consider proposed actions related to the FCPP (i.e. lease renewal) and therefore considered alternatives to that action (e.g. alternative forms of energy production). Within the cumulative effects analysis of both the EA and the FCPP/NMEP EIS which is incorporated by reference, all reasonably foreseeable past, present, and future projects were analyzed for impacts when considered cumulatively. See also response to WELC comments 15, 19, 26, and 27.

An EA prepared in support of an individual proposed action can be tiered to a programmatic or other broader-scope environmental impact statement such as the FCPP/NMEP EIS, as is this EA. A finding of no significant impact other than those already disclosed and analyzed in the EIS to which the EA is tiered may be called a "finding of no new significant impact" (43 CFR 46.140 (c)). Therefore, an EIS is not required and OSMRE has made a finding of no new significant impact. This finding is based on the context and intensity of the project as described in the Record of Decision.

Comment 35

Shiloh Hernandez, Staff Attorney

Consideration of cumulative actions within a single NEPA process is, notably, a different obligation from the agencies separate and independent duty to consider cumulative impacts. Compare 40 C.F.R. § 1508.7 (cumulative impacts) with *id.* § 1508.25(b) (requiring consideration of "cumulative actions" in single NEPA analysis). An agency's duty to address cumulative actions in a single NEPA process is also different from an agency's duty to consider connected actions: "there may be circumstances in which proposals that are not functionally or economically interdependent may, because of cumulative impacts, trigger the requirement to prepare a comprehensive EIS." *Friotiofson v. Alexander*, 772 F.2d 1225, 1241 n. 10 (5th Cir. 1985) *rev'd on other grounds*, *Sabine River Authority v. U.S. Dept. of Interior*, 951 F.2d 669 (5th Cir. 1992) (explaining difference between agency duty to consider "cumulative impacts," agency duty to

complete comprehensive NEPA analysis for “cumulative actions,” and agency duty to complete comprehensive NEPA analysis for “connected actions”). Thus, even if the EA’s cumulative impacts analysis somehow passes muster (though it does not), and even if the mine expansion project is found to be not connected to the FCPP (thought it is), this does not obviate OSM’s—and, more broadly, Interior’s—obligation to prepare a comprehensive NEPA analysis to address cumulative actions.

Response

The comment does not identify a “cumulative action” that was not analyzed in the EA. Section 5.1 of the EA (*Past, Present, Reasonably Foreseeable Actions in the Project Vicinity*) identifies the cumulative actions considered. The EA was comprehensive in its analysis of the proposed action, and other cumulative actions as listed in the cumulative impact assessment. There are no actions proposed at the FCPP related to the Mine Plan revision (the FCPP would continue to operate), therefore the combustion-related effects are neither “connected actions” nor part of the proposed action. However, the combustion related effects were considered in the cumulative impact assessment. Also, as described in the FONNSI, the proposed action of the EA did not have new significant impacts, and therefore an EIS was not required.

Comment 36

Shiloh Hernandez, Staff Attorney

All the mining at Navajo Mine (Areas I through V) is connected and must be evaluated together as connected and cumulative actions. *Id.* §§ 1501.5(a), (b). Since the Navajo Nation leased 24,000 acres for the Navajo Mine over half a century ago in 1957, the mine has successfully “evaded meaningful environmental review.” *Diné C.A.R.E. v. Klein*, 747 F. Supp. 2d 1234, 1240 (D. Colo. 2010). Aside from three EISs that indirectly referenced portions of the mine, the mine’s expansion has only been evaluated in a series of EAs for individual segments of the mine. Counting the present proposed extension, since 1991, expansion of the mine has been segmented into parcels of 829, 508, 708, 106, and now 830 acres, each subject only to evaluation in an EA. None of these expansions would have been economically viable if isolated from the other segments of the mine. Moreover, none of these segments in isolation could justify the infrastructure required to mine it (draglines, railroad to FCPP, and associate infrastructure), to burn it at FCPP (the power plant), or to transport the electricity to load centers in four states (transmission lines). Thus each section is an “independent part[] of a larger action and depend[s] on the larger action for [its] justification.” 40 C.F.R. § 1508.25(a)(1)(iii). Additionally, the EA admits that extension of the mine to the 10,000 acres that comprise Area IV North and Area IV South is “reasonably foreseeable.” EA at 204, 207. The EA also concedes that Area V is expected to be mined as well. EA at 205. Finally, the mining expansion contemplated in Area IV North, as well as the other mining activities, are cumulative actions. § 1508.25(b). Thus, the mining of all segments of the Navajo Mine, including Area IV North, as well as Area IV South and Area V, are connected and cumulative actions that must be evaluated together. *Id.* §§ 1501.5(a), (b). OSM readily admits that coal blending is necessary from distinct areas at Navajo Mine to meet BTU requirements in burning coal at FCPP.

OSM’s failure to prepare a single EIS for Area IV North, along with FCPP and the other areas of the Navajo Mine, is improper segmentation of a project to avoid preparation of a rigorous EIS. Indeed, the agency’s unexplained decision to reduce the expansion from over 3,000 acres to approximately 800 evades the requirement in the Department of the Interior’s NEPA manual that normally requires an EIS for mining

proposals of more than 1,280 acres. DOI Departmental Manual 13.4(A)(4)(b); *see also Diné C.A.R.E.*, 747 F. Supp. 2d at 1251-53 (holding that OSM had failed to show why an EIS was not required for the proposed expansion into Area IV North based on the standard provided by its own manual). If these segments are not subjected to one comprehensive EIS, then 33,000 acres of coal could be strip-mined and burned over a period of nearly a century without ever undergoing “meaningful environmental review”— an incredible divergence from DOI’s rule that strip mines greater than 1,250 acres that occur over 15 years “normally require the preparation of an EIS.” DOI Departmental Manual 13.4(A)(4). One significant problem that arises from OSM’s segmentation of operation into individual, discrete mine expansions is that it never considers the inevitable shutdown of the mine and power plant. There is no question that the project cannot continue indefinitely. The eventual closure of the operation will cause significant impacts, including a legacy of pollution and uncertain responsibility for clean up, now conceptually NTEC’s problem with BHP’s departure. By failing to consider these inevitable aspects of the operation, OSM evaluates only the benefits of the mining “boom” and not the inevitable “bust.” This is contrary to the “rule of reason” and results in a skewed environmental analysis. *See Sierra Club v. Sigler*, 695 F.2d 957 (5th Cir.) (agency cannot consider only benefits of action, but must also consider costs).

Response

The mine and the power plant commenced operation prior to the enacting of NEPA and SMCRA legislation. The Navajo Nation granted a 24,000-acre coal lease (Navajo Tribal Coal Lease 14-20-603-2505) in July 1957 to Utah Construction and Mining Company (subsequently BHP Navajo Coal Company [BNCC]). Through a series of subsequent lease revisions and amendments, the lease area was increased to approximately 33,600 acres. Although the lease agreement granted BNCC the right to mine within the lease area; mining cannot occur without a SMRCA permit covering the area of the lease to be mined. See 30 CFR 750.11. In addition, a finding that OSMRE must make a finding when approving a new permit or a significant revision to a permit application is that BLM approve the mine plan pursuant to 25 CFR 216.7 or 43 CFR Part 3480 as applicable.

Therefore, since the enactment of NEPA, all SMCRA permits and permit revisions considered at Navajo Mine have been subject to NEPA review. 30 CFR 774.13 sets out application requirements and at subsection (c) criteria for approval; Section 774.13(3) identifies that for SMCRA purposes the agency considers the application before it. The FCPP/NMEP EIS presented a comprehensive NEPA analysis for the 25 year period to 2041.

An EA prepared in support of an individual proposed action can be tiered to a programmatic or other broader-scope environmental impact statement such as the FCPP/NMEP EIS, as is this EA. A finding of no significant impact other than those already disclosed and analyzed in the EIS to which the EA is tiered may be called a “finding of no new significant impact” (43 CFR 46.140 (c)). Therefore, an EIS is not required and OSMRE has made a finding of no new significant impact.

The recently completed FCPP/NMEP EIS that is incorporated by reference into the EA comprehensively evaluates the potential impacts of continued operations at the mine, power plant, and transmission lines all as connected actions, and also evaluates potential cumulative effects of these actions considered in combination with all past, present, and reasonably foreseeable future actions. In addition, the cumulative effects analysis of the EA considers the continued operation of the FCPP. The past impacts were primarily

described as part of the setting, but were considered in determining environmental impact (for example, of mercury deposition, storage of coal combustion residue, and others). Present and future impacts, including the effects of power plant shutdown, were addressed in each resource category analysis. The analysis period extends to 2041; any mining activity after that time is speculative. Therefore, there has been no segmentation of analysis of impacts.

OSMRE did not reduce the area to be mined from 3,000 to 800 acres, rather, OSMRE considered the revised Mine Plan that was prepared by the applicant and put forth for consideration of a SMCRA permit. The 2006 application that led to the 2008 EA was for 3,000 acres, but was withdrawn by the applicant after the 2010 remand and vacatur. The application that led to the 2012 EA, and this EA, proposed mining of 800 acres because that was the area required to meet the coal supply contract that expires in 2016.

Finally, the consequences of shutdown and decommissioning of the mine and FCPP are addressed in the EA in the analysis of the No Action alternative.

Comment 37

Shiloh Hernandez, Staff Attorney

Council on Environmental Quality guidance on NEPA (40 C.F.R. § 1502.21) pertains to Incorporation by Reference and states,

Agencies shall incorporate material into an environmental impact statement by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. The incorporated material shall be cited in the statement and its content briefly described. No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time allowed for comment. Material based on proprietary data which is itself not available for review and comment shall not be incorporated by reference.

This legal citation confirms the onus for OSMRE to insure that public review is not impeded by the agency's NEPA action. Here, OSMRE's attempt to incorporate by reference the Navajo Mine EA into the FCPP/NTEP EIS project is unsupported by agency actions below.

Response

OSM rigorously followed the guidance for incorporation by reference included in this comment. In addition, the Court's decision noted that all parties agreed that OSMRE may be able to comply with NEPA relating to its consideration of the permit revision application by tiering to the comprehensive EIS for the FCPP/NMEP EIS, published May 1, 2015. The FCPP/NMEP EIS is available on the OSMRE website, chapter houses, libraries, and provided to interested parties who requested paper copies or CDs. Therefore incorporation by reference followed CEQ guidance, and was noted in the remand order.

Comment 38

Shiloh Hernandez, Staff Attorney

OSMRE has limited public involvement on the Revised EA for Navajo Mine Area IV North Permit Revision Application to those with internet accessibility. OSMRE posted the EA on their website on October 15, 2015 and made no effort to place hard copies in impacted communities. As OSMRE is well

aware, many citizens who may want to know what is occurring at Navajo Mine simply have no electricity or computers with which to be informed on OSMRE's actions. This is particularly egregious for OSMRE due to the controversy over this project and previous OSMRE failure to adequately provide meaningful public participation for the Navajo Mine Area IV NEPA undertakings. No public hearing have been conducted for the Revised EA for Navajo Mine Area IV North Permit Revision Application and OSMRE points back to the 2012 EA as having complied with public participation requirements. OSMRE made no effort to provide Navajo speaking citizens with any way to understand the content of the EA.

In addition, and more concerning, is that OSMRE made no attempt to provide the FCPP/NMEP EIS on their website for Area IV North as a document incorporated by reference. OSMRE throws the FCPP/NMEP EIS into the Area IV North EA and essentially tells the public to "trust us, there is no significance." This is woefully and legally inadequate.

Response

The revised EA was available on the OSMRE website, and by request to OSMRE as noted in the EA, the FONNSI, and public/stakeholder noticing for the EA. The Revised EA and unsigned FONNSI were posted on OSMRE's Western Region website for public review and comment on October 15, 2015. Public notices were placed in the Navajo Times, Farmington Daily Times and Gallup Independent newspapers. Radio announcements were aired in Navajo and English on AM 660 in Window Rock, AZ and AM 960 in Farmington, NM. On October 26, 2015, OSMRE discovered that it had inadvertently cut off the pages from the end of Chapter 4 of the publicly available version. OSMRE immediately corrected the EA the morning of October 26th. On October 29, 2015, OSMRE ran new public notices extending the public comment period from November 16th to November 25, 2015.

Additionally, letters soliciting comments and announcing the availability of the revised EA and unsigned FONNSI were mailed to sixteen Federal, State and Tribal governmental agencies as well as all individuals that had commented on the 2012 EA & FONSI.

Public input regarding the Proposed Action has been solicited during a wide-ranging project planning process. Electronic versions of the currently approved permit application package (PAP) for the Navajo Mine, the Area IV North permit revision application, the 2012 EA and 2012 FONSI were made available to the public on OSMRE's Western Region webpage and at the Farmington, New Mexico, Public Library.

Public workshops were conducted for the 2012 EA which addressed the same Proposed Action. Two public workshops were held in April of 2011 at the Tiis Tsoh Sikaad (Burnham) and Nenahnezad Chapter Houses, on the Navajo Nation near the project site. OSMRE and the Army Corps of Engineers (USACE) personnel made presentations and a series of informational posters were on display. Technical personnel from OSMRE, BIA, BLM, USACE and Navajo Nation Surface Mining Program (NSMP), along with a Navajo/English interpreter and a court reporter, were available to answer and record comments. Comment forms were made available for written comments. In addition, OSMRE conducted an informal conference on June 15, 2011, at the Nenahnezad Chapter House on the SMCRA permit revision application. A court reporter and a Navajo/English interpreter were also available at the informal conference. In addition, the EA uses the results of recent public involvement conducted in 2012 and 2014 associated with the FCPP/NMEP EIS

published in May 2015, which also discussed continued mining at the Navajo Mine including Area IV North. A summary of issues from the 2011 public meetings is included in Section 1.8 of the EA and is supported by the summary of issues provided in the FCPP/NMEP EIS, which has been incorporated by reference into the EA. Concerns raised by the public are also discussed throughout the document. In addition, this EA also received and considers comments received during the 42-day review period of the EA, detailed comment responses can be found in Appendix H of the EA.

Comment 39

Shiloh Hernandez, Staff Attorney

Due to OSMRE's attempt to tier the Revised EA for Navajo Mine Area IV North Permit Revision Application to the FCPP/NMEP EIS, OSMRE is trying to utilize a Finding of No New Significant Impact (FONNSI). This would need to be consistent with 40 C.F.R. § 1508.28. Citizens Groups disagree that there is no significant impact and request that OSMRE provide evidence that any Finding of No Significant Impact (FONSI) is legally in place for Navajo Mine Area IV expansion. OSMRE cannot legally finalize a FONNSI for Revised EA for Navajo Mine Area IV North Permit Revision Application, in essence claiming that there is no new significant impact since the last EA. Since the Revised EA for Navajo Mine Area IV North Permit Revision Application now admits that the project timeline is through 2019-2020, the claim that there is no new significant impact is unbelievable given the known significant impacts associated with the comprehensive FCPP/Navajo Mine over the past 50 years, including but not limited to mercury and greenhouse gas impacts.

Response

An EA prepared in support of an individual proposed action can be tiered to a programmatic or other broader-scope environmental impact statement such as the FCPP/NMEP EIS, as is this EA. A finding of no significant impact other than those already disclosed and analyzed in the EIS to which the EA is tiered may be called a "finding of no new significant impact" (43 CFR 46.140 (c)). In accordance with those regulatory procedures, OSMRE has made a finding of no new significant impact and an EIS is not required. No new environmental effects meet the definition of significance in context or intensity, as defined within the federal regulations at 40 CFR 1508.27. This finding means that there are no new significant effects that have not already been analyzed in the FCPP/NMEP EIS.

Therefore, an EIS is not required and OSMRE has made a finding of no new significant impact.

Comment 40

Shiloh Hernandez, Staff Attorney

Perhaps the biggest problem facing humanity is climate change. The Revised EA for Navajo Mine Area IV North Permit Revision Application perpetuates the notion that methane from Navajo Mine and associated impacts from burning coal at FCPP does not present a significant impact. The FCPP/NMEP EIS discloses that 258 million metric tons of carbon dioxide equivalent emissions would result from FCPP and Navajo

Mine operating through 2041.^{1,2} This is followed by the conclusion by OSMRE that the Proposed Action of coal mining and burning at FCPP/Navajo Mine through 2041 would be result in minor short- and long-term impacts to climate change.²

The Secretary of the Interior has also issued an order compelling OSM “to consider and analyze potential climate change impacts. . . when making major decisions regarding potential use of resources under the Department’s purview.” Sec. Or. 3289 § 3(a) (Sept. 14, 2009). Given this order, as well as the urgent need to reduce greenhouse gas pollution, OSM must consciously account for climate change and evaluate climate change/fossil fuel emissions in the Revised EA for Navajo Mine Area IV North Permit Revision Application.

Response

Climate change was rigorously analyzed, and the effects disclosed, in the EA and in the FCPP/NMEP EIS incorporated by reference. See responses to WELC comments 12, 14, and 15. The comment even cites some of the analysis. These effects were not new significant effects because they were fully addressed in the FCPP/NMEP EIS. An EA prepared in support of an individual proposed action can be tiered to a programmatic or other broader-scope environmental impact statement, as is this EA. A finding of no significant impact other than those already disclosed and analyzed in the EIS to which the EA is tiered may be called a “finding of no new significant impact” (43 CFR 46.140 (c)). OSMRE has made a finding of no new significant impact and an EIS is not required.

With respect to the significance of the issue, no Federal, tribal, or state rules or regulations currently limit or curtail GHG emissions from FCPP, Navajo Mine, or other sources in the state of New Mexico or Navajo Nation. Federal and tribal stationary source regulations require monitoring, record keeping, and reporting of GHG emissions from FCPP; however, they do not apply to Navajo Mine since it does not meet the definition of a stationary source (i.e., consists of mobile source equipment only). As such, there are no numerical criteria to determine the level of significance (such as an air quality standard or a national ambient air quality standard).

In June 2014, EPA issued the “Clean Power Plan” proposal to cut carbon pollution from existing power plants. Although not a significance criterion, the proposal establishes state-by-state goals to reduce GHGs by 2030. The focus is on power plants, but states have discretion to meet goals with a combination of industries. The proposed regulation is draft at this time, and is subject to revision or rejection subject to comment and finalization. Additionally, tribal lands are not given goals at this time. A proposed timetable is suggested for moving into the process with tribes, with July 2017 being the target date when EPA may have a proposed goal for tribal lands. States are given a year to establish programs, with a provision for a 2-year extension; therefore, 2020 is when states may be required to have a program in place. Programs for compliance by tribes may happen a year or two later, with the compliance timeframe adjusted accordingly. Proposed requirements in the plan were not analyzed in the EA because of the uncertainties associated with whether the plan will be adopted or modified, and how it would be implemented on the Navajo Nation. Although EPA’s Federal Implementation Plan for Best Available Control Technology for

¹ Department of the Interior, Office of Surface Mining Reclamation and Enforcement, Final Environmental Impact Statement, Four Corners Power and Navajo Mine Energy Project, May 2015, page 4.2-21.

² *Id.*, page 4-2-27.

the FCPP did not explicitly include GHG reductions, the option selected by APS would reduce GHG emissions from FCPP by 26 percent compared to levels in 2005 (the baseline for the Clean Power Plan).

As a result of the FIP for BART at FCPP, GHG emissions from the FCPP were reduced by 26 percent as of December 2013 (Table 3.6-12).

Table 3.6-12. Annual Reduction in GHG Emissions as a Result of BART Compliance

	CO ₂ e MT/yr	CO ₂ e kg/MW-hr
Units 1, 2, 3, 4, 5	14,006,383	873
Units 4 and 5 ¹	10,339,030	833
Total Reduction (years 2014, 2015, and 2016)	3,667,353	40
Percent Reduction	26%	5%

Notes:

CO₂e = carbon dioxide equivalents

kg/MW-hr = kilograms per megawatt-hour (same as grams per kilowatt-hour)

MT = metric ton, 1,000 kg or 2,204.6 lbs

MT/yr = metric tons per year

¹ Note that APS will install “hot side/high dust” SCRs in 2018 between the boiler economizer and secondary air preheater on Units 4 and 5; however, this change will not affect GHG emissions during the EA analysis period. Additionally, 99.9 percent of the experienced GHG reduction is through shutdown of Units 1, 2, 3. Installation of SCRs on Units 4 and 5 will reduce nitrous oxide along with nitric oxide and nitrogen dioxide; however, the resulting reduction in GHG emissions from SCR operation is negligible by comparison since over 99 percent of CO₂e emissions from coal combustion comprise carbon dioxide.

Therefore, although the Climate Action Plan would not constitute a numerical significance criterion, it is noteworthy that the GHG reductions at FCPP during the remaining time that Area IV North coal would be combusted is close to the goal in the Plan. This supports OSMREs findings with respect to climate change.

Comment 41

Shiloh Hernandez, Staff Attorney

The 2014 identification of the Four Corners Region as the “methane hotspot” of the United States is neglected by OSMRE’s Revised EA for Navajo Mine Area IV North Permit Revision Application. The “methane hotspot “ was detected by scientists from the University of Michigan, NASA’s Jet Propulsion Laboratory, Los Alamos National Laboratory and California Institute of Technology using space based observations and earth-based measurements to evaluate the 2003-2009 timeframe.¹ The authors conclude: “The persistence of this CH₄ signal from 2003 onward indicates that this source is likely from established gas, coal and coalbed methane mining and processing.”² OSMRE must evaluate methane emissions from Navajo Mine Area IV to all methane emissions within the entire Navajo Mine, connect to FCPP CO₂ emissions and then evaluate all reasonably foreseeable development in the region, including oil and gas activity. OSMRE has failed to conduct this analysis to date.

¹ Eric Kort et al., Four Corners: The largest US methane anomaly viewed from space, Geophysical Research Letters (2014)

² *Id.*

Response

Page 182 of the EA discusses the “methane hotspot”, and the GHG potential of methane emissions are consistently analyzed in the Climate Change section of the EA and the FCPP/NMEP EIS, which is incorporated by reference into the EA. In particular, the study referenced in the comment was addressed in the EA, as quoted below.

The EA evaluates CH₄ emissions from the mine, directly, indirectly, and cumulatively with other sources, and discusses this issue as follows. A September 2014 study based on data collected by a new satellite-based CH₄ monitoring system found relatively higher levels of CH₄ in the atmosphere over the Four Corners region than elsewhere in the Southwest (referred to as a “methane hot spot”). A period of validating the observations is necessary; however, limited ground-based measurements appear to corroborate the space-based findings. The study primarily attributed the CH₄ levels to natural gas production, processing, and distribution, noting that “[oil and gas] Operators in Four Corners report higher emissions than any other basin in the new EPA greenhouse gas reporting program (GHGRP) subpart W [EPA 2013].” Although the study notes other sources of CH₄, such as coal mining and ruminant animals, the study focuses on oil and gas extraction and proposed increases in shale gas production in the area as the source of elevated CH₄ levels. The study does not change the regional baseline information, which is based on 12 years of historic data; therefore, the CH₄ analysis presented in the EA is the most relevant background data for the impact analysis. Additionally, the Navajo Mine CH₄ emissions total less than 1 percent of the total CH₄ emissions in the Four Corners area, which is consistent with the findings of the recent study that oil and gas production, primarily coal-bed methane extraction, is the likely cause of the anomaly noted in the study.

Comment 42

Shiloh Hernandez, Staff Attorney

As a rule of thumb, an agency should consider a project’s GHG emissions if they exceed 25,000 metric tons CO₂e. *Id.* at 3. An agency should consider “direct and indirect GHG emissions,” and where they are significant (i.e., greater than 25,000 tons CO₂e), they should be “quantified and disclosed.” *Id.* at 5; 40 C.F.R. §§ 1508.25(c)(1)-(3). “Analysis of emissions sources should take account of all phases and elements of the proposed action over its expected life” CEQ, *Draft Guidance* at 5. When direct and indirect GHG emissions exceed the relevant threshold (again, 25,000 tons CO₂e), the agency should also consider “mitigation measures and reasonable alternatives to reduce action-related GHG emissions.” *Id.* When addressing the “cumulative effects of GHG emission related to a proposed action,” an agency should “focus on an assessment of annual and cumulative emissions of the proposed action and the difference in emissions associated with alternative actions.” *Id.* In addition to quantifying GHG emissions, the EA must “discuss the *actual* environmental effects resulting from [the proposed action’s] emissions.” *Ctr. for Biological Diversity*, 538 F.3d at 1216. Here, the EA fails entirely to consider the indirect and cumulative effects of the GHG emissions that would result from burning the million tons of coal that they plan to mine from Area IV North through 2019-2020, as well as from the historic mining and combustion of coal since that coal has been produced from the mine, in 1963. EA at 12, 215. The EA also does not account for the GHG emissions from other past, present, and reasonably foreseeable fossil fuel production and combustion sources in the region, including the San Juan Generating Station, San Juan Mine, and the thousands of oil and gas wells that have turned the San Juan Basin into a fossil fuel sacrifice zone. The EA concludes,

“Future operation of FCPP and Navajo Mine Area IV North would emit GHGs; and therefore, contribute incrementally to climate change; however, these emissions would continue to comprise a negligible (underlined for emphasis) – less than 1% of the U.S. GHG inventory and the national electric power sector and about 12 percent of the regional GHG emissions from electric power generation.” (Revised EA 2015, page 344). This is a particularly shocking conclusion by OSMRE denying the climate change impacts of FCPP/Navajo Mine. Courts have been clear that an agency may not minimize the impacts of an action by placing in such a broad context that impacts are masked. *Pac. Coast Fed’n of Fishermen’s Assn’s v. NMFS*, 265 F.3d 1028, 1036-37 (9th Cir. 2001).

Response

The CEQ guidance cited in the comment uses 25,000 metric tons CO₂ equivalent annual emissions as a “reference point” below which GHG emissions quantification is not warranted. The comment is not correct in stating that it is an indicator of significance, and the comment is not correct in using it as an indicator to consider mitigation. The guidance uses the level as indicating a duty to quantify and disclose, which the EA does. The “reference point” was taken from the minimum level of GHG emissions that warrant annual monitoring and reporting under the EPA’s Mandatory Reporting Rule (40 CFR 98). Furthermore, as discussed at length in the EA:

“Current draft CEQ guidance (2010) acknowledges that

it is not currently useful for the NEPA analysis to attempt to link specific climatological changes, or the impacts thereof, to the particular project or emissions, as such direct linkage is difficult to isolate and to understand. The estimated level of GHG emissions can serve as a reasonable proxy for assessing potential climate change impacts.

Given those current limitations, any comparison of Navajo Mine’s GHG emissions to total GHG emissions at the state, national, or global level would have no context and simply be meaningless for an EA. Twenty-five thousand metric tons or more of CO₂e on an annual basis (25,000 Mtpy CO₂e) is a meaningful metric for GHG emissions in this instance, only because it corresponds to the minimum level of GHG emissions that warrant annual monitoring and reporting under the EPA’s Mandatory Reporting Rule (40 CFR 98).”

The EA has an extensive discussion of Climate Change, including analyses that go beyond the December 2014 draft CEQ guidance on climate change which the comment quotes. In their 2010 guidance, the CEQ states that, “in the agency’s analysis of direct effects, it would be appropriate to: 1) quantify cumulative emissions over the life of the project; 2) discuss measures to reduce GHG emissions...., and 3) qualitatively discuss the link between such GHG emissions and climate change.”

In part to provide a unified Federal approach to climate change analysis in NEPA, the CEQ published additional draft guidelines in December 2014 on incorporating climate change analysis into NEPA documents. The EA is responsive to the new guidance because it contains: (1) effects of climate change on regional resources including the Project; (2)

consideration of alternatives to mitigate the effects of climate change; (3) consideration of both long-term and short-term effects and benefits; and (4) full emissions monetization.

The analysis in the EA presents the quantitative assessment of potential future GHG emissions from FCPP, Navajo Mine (both the Navajo Mine Permit Area and proposed Pinabete SMCRA Permit Area), as well as the GHG emissions of the 16 other power plants in the region.

Past data on emissions is provided in the EA, and it is used as a guide to future emissions. Predicted emissions from FCPP and 16 other regional plants are based on historic operating data reported to the EPA referencing the 7-year historic baseline period of 2005 to 2011 when flue gas desulfurization became active on Units 4 and 5. Further effects of past emissions are addressed in the environmental setting of the EA.

EPA issued its FIP for BART at FCPP to control NO_x emissions, which led to changes in the affected environment. As a result of the BART ruling, APS shut down Units 1, 2, and 3 on December 30, 2013. This step results in a substantial reduction in the GHG emissions from FCPP. As a result of implementing the steps required for BART compliance, GHG emissions from the FCPP were reduced by a minimum of 26 percent (current PTE vs. historic baseline).

Draft CEQ guidance on climate change analysis (CEQ 2014) proposes that agencies should consider mitigation measures to reduce GHG emissions, subject to reasonable limits based on feasibility and practicality. The finding of the EA was that the Proposed Action, including the continuing operations of FCPP, would not by themselves result in a major contribution to adverse effects associated with climate change. Therefore, no additional mitigation was recommended. However, the FCPP/NMEP EIS still considered mitigation and alternatives to coal combustion. The analysis also explored the feasibility of methane capture similar to the drilling processes used in commercial coalbed methane extraction. Methane in the Navajo Mine coal seams exists in a very low pressure environment, which would require the seams to be pressurized during the extraction process. Additionally no infrastructure, such as pipeline collection systems, is near enough to the mine to make collection and resale feasible. Therefore, due to low pressure in the coal seams and lack of infrastructure to bring captured methane to market, mine methane capture was determined to be infeasible.

Comment 43

Shiloh Hernandez, Staff Attorney

Moreover, even the calculations of GHG emissions that the EA does provide understate the magnitude of emissions—and thus warming impacts—because the EA uses an outdated GWP of 21 for methane rather than the most recent science, which provides that methane has a GWP of 25 using a 100-year time period and a GWP of 105 using a 20-year time period. *See supra* Part 3.

Response

The EA has been revised to include the new GWP for methane and for nitrogen oxide, see Sections 3.6.6 and 4.6.1 of the EA. As cited in the EA, the change in factor was from EPA

(April 2015), Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2013, Executive Summary, page ES-3:

“Revised UNFCCC reporting guidelines for national inventories now require the use of GWP values from the IPCC Fourth Assessment Report (AR4) (IPCC 2007). Therefore, to comply with international reporting standards under the UNFCCC, official emission estimates are reported by the United States using AR4 GWP values, which have replaced the previously required use of SAR GWP values in the U.S. Inventory. All estimates are provided throughout the report in both CO₂ equivalents and unweighted units. A comparison of emission values using the AR4 GWP values versus the IPCC Second Assessment Report (SAR) (IPCC 1996), IPCC Third Assessment Report (TAR) (IPCC 2001), and the IPCC Fifth Assessment Report (AR5) (IPCC 2013) GWP values can be found in Chapter 1 and, in more detail, in Annex 6.1 of this report. The GWP values used in this report are listed below in Table ES-1. The use of IPCC AR4 GWP values in this and in future year inventories will apply across the entire time series of the Inventory (i.e., from 1990 to 2013 in this year’s report).”

The analysis in the 2015 EA revised to account for the new factor, but the results are practically the same. The mining emissions of GHG, including fugitive methane, are a very small fraction of total GHG when considered in combination with the emissions from FCPP, and therefore whether the GWP of methane is 21 or 25 makes no material difference because 99.5% of GHG emissions from coal combustion is CO₂. For example, comparing the results of the past vs. new GWPs, the difference is: 0.02 percent, which is well within the EPA uncertainty for fossil fuel combustion of -2% to +5% (EPA GHG Inventory Report Annex 7).

Comment 44

Shiloh Hernandez, Staff Attorney

The EA fails to quantify the past, present, and reasonably foreseeable GHG emissions from combustion of the mine’s coal at FCPP, which has occurred since 1963. This failure is particularly egregious since provision of coal from Navajo Mine to FCPP is the purported basis of the expansion’s purpose and need. EA at 11-14; *cf. N. Plains Resource Council v. Surface Transp. Bd.*, 668 F.3d 1067 (9th Cir. 2011) (holding it was arbitrary and capricious for agency to fail to consider cumulative impacts from coal mine that was financial justification of proposed railroad); *see also Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 537, 549-50 (8th Cir. 2003) (holding that the agency failed to take requisite hard look by not considering indirect effect of increased air pollution that would result from railroad line which would increase availability of coal while decreasing cost); *Ctr. for Biological Diversity v. Dept. of Interior*, 623 F.3d 633, 646 (9th Cir. 2010) (agency must not “avert[] its eyes from what is in plain view before it”). Like the EA vacated by the Ninth Circuit in *Center for Biological Diversity v. National Highway Traffic Safety Administration*, the EA here fails entirely to discuss the “actual environmental effects” that will result from FCPP’s GHG emissions. 538 F.3d at 1216. This is problematic because, as mentioned above, the EA fails to carry through on real consideration of mitigation measures or reasonable alternatives that would reduce foreseeable GHG emissions.

Regarding the mine’s past and reasonably foreseeable GHG emissions, the mine has been producing coal since 1963, producing vast quantities of GHGs, in particular methane, that, as noted above, is an extremely

potent GHG. The mine also reasonably foresees continued operations through Areas IV North, IV South, and V. 2012 EA at 204 (“Reasonably foreseeable actions . . . are expected to include mining . . . the remainder of Area IV North and Area IV South.”), 205 (noting that Area V could be mined), 207 (Areas IV North and South comprise over 10,000 acres). And FCPP expects to continue to operate—and thus burn the mine’s coal—for “at least” 20 more years. Source Specific Federal Implementation Plan for Implementing Best Available Retrofit Technology for Four Corners Power Plant: Navajo Nation, 75 Fed. Reg. 64,221, 64,228 (Oct. 19, 2010). However, none of the GHG emissions from these past and reasonably foreseeable mining operations are addressed by the EA.

Response

OSMRE took a hard look when evaluating GHG emissions from the proposed action. Past emissions are addressed through the description of the environmental setting for GHG and climate change. Foreseeable future emissions are quantified and discussed, including the Social Cost of Carbon and indirect effects of climate change (to special-status species, for example). The analysis included actual effects, as well as potential effects including those quantified in the SCC.

CEQ guidance (June 4, 2005: “Guidance on the Consideration of Past Actions in Cumulative Effects Analysis) states: “The environmental analysis required under NEPA is forward-looking, in that it focuses on the potential impacts of the proposed action that an agency is considering. Thus, review of past actions is required to the extent that this review informs agency decision making regarding the proposed action. . . . the effects of past actions may warrant consideration in the analysis of the cumulative effects of a proposal for agency action. CEQ interprets NEPA and CEQ's NEPA regulations on cumulative effects as requiring analysis and a concise description of the identifiable present effects of past actions to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the agency proposal for action and its alternatives may have a continuing, additive and significant relationship to those effects. . . . Agencies retain substantial discretion as to the extent of such inquiry and the appropriate level of explanation.

In accordance with that guidance and the Departmental regulation (43 CFR 46.115), OSMRE described the present effects of past actions as necessary to inform its decision making. The EA presents the historic and projected GHG emissions from the 17 electric power-generating facilities in the Four Corners region (northeastern Arizona, southwestern Colorado, Navajo Nation, and northwestern New Mexico), including FCPP, that report to U.S. and tribal EPAs pursuant to Part 75 of the Clean Air Act. These sources were quantified in order to provide context regarding regional GHG emissions and their portion of national GHG emissions resulting from electric power generation in this area. The EA summarizes historic GHG emissions reported to, and published by, EPA for the most recent 6-year period (2005 to 2010) from electric power generation on national, regional (17 plants, including FCPP), and local (FCPP only) levels. The EA also addresses GHG emissions at the New Mexico state level, showing reported statewide industrial GHG emissions from all sources for 2008, 2009, and 2010 with FCPP Part 75 data included for geographic context.

The past emissions are also quantified for the representative 12-year¹ period 2000 to 2011, for FCPP Units 1, 2, 3, 4, and 5, as reported to EPA pursuant to Part 752. Similarly, GHG emissions from only Units 1, 2, and 3 are presented for the same period. Describing the past GHG data in this way illustrates the relative contributions of the older, less-efficient generating units (1, 2, and 3) and the newer, more-efficient generating units (4 and 5).

Mining activity would also cause emissions from diesel-powered off-road equipment and on-road vehicles, explosives detonation, fugitive methane CH₄ liberated from coal seams, and fugitive dust, as described in the EA. All equipment and vehicle engines used at the mine meet Federal emissions standards applicable on the date of manufacture. In comparison to stationary source GHG emissions from FCPP, mobile and fugitive source GHG emissions comprise a small fraction of total Project GHG emissions, only 0.5 percent of total GHG emissions. This percentage is within EPA limits of precision of -2 to +5 percent for fossil fuel combustion (EPA 2015, 2012f).

Mobile GHG emissions from the Navajo Mine and FCPP are also quantified. Mobile and fugitive source GHG emissions comprise a small fraction of total GHG emissions, only 0.7 percent of total GHG emissions.

The analysis also considers the combustion-related effects at FCPP of EPA's FIP for BART at FCPP to control NO_x emissions, which led to changes in the affected environment. As a result of the BART ruling, APS shut down Units 1, 2, and 3 on December 30, 2013. This step results in a substantial reduction in the GHG emissions from FCPP. As a result of implementing the steps required for BART compliance, GHG emissions from the FCPP would be reduced by a minimum of 26 percent (future PTE vs. historic baseline), and as a result of the GHG emission reductions from BART compliance, the percentage contribution of FCPP to regional GHG emissions will decrease from approximately 17 percent to approximately 12 percent.

Although the results of the climate change analysis did not indicate the need for mitigation, the EA and the FCPP/NMEP EIS still considered mitigation and alternatives to coal combustion. The analysis also explored the feasibility of methane capture similar to the drilling processes used in commercial coalbed methane extraction. Methane in the Navajo Mine coal seams exists in a very low pressure environment, which would require the seams to be pressurized during the extraction process. Additionally no infrastructure, such as pipeline collection systems, is near enough to the mine to make collection and resale feasible. Therefore, due to low pressure in the coal seams and lack of infrastructure to bring captured methane to market, mine methane capture was determined to be infeasible.

Response to comment 40 and 42 also address this comment.

¹ The Title V record-keeping requirement is 5 years.

² Part 75 CO₂ emissions corrected to CO₂e by multiplying by 1.0055 (average) to account for CH₄ and N₂O emissions with EPA official GWPs applied (21 and 310, respectively).

Comment 45

Shiloh Hernandez, Staff Attorney

Given the projected cross-media impacts of climate change—which unquestionably will be aggravated by the direct and indirect GHG emissions from the Navajo Mine—it was arbitrary and capricious for OSMRE to only briefly (and inadequately) mention the effects of climate change with regard to air pollution. Instead, as mentioned above, OSM should have considered how climate change is projected to impact water, soil, vegetation, wildlife, endangered and threatened species, the economy, and vulnerable populations, alone and in conjunction with the direct, indirect, and cumulative impacts of the proposed extension of the Navajo Mine. Without such a hard look, the EA will have failed to take a hard look at impacts and OSM cannot justify its Finding of No New Significant Impact. 40 C.F.R. §§ 1508.7, 1508.8, 1508.27(a), (b).

Response

The EA fully considers cross-media effects of climate change. The analysis addressed impacts to water, vegetation, wildlife, special status species, and socioeconomic and other effects through the application of the Social Cost of Carbon method. The following summarizes some of the major items discussed in Sections 5.2.9.2.1 and 4.6.1.3 of the EA.

Climate change will occur and affect listed species and their habitats over the life of the Proposed Action and beyond, whether or not the Proposed Action occurs. Climate change has the potential to change precipitation patterns, including the timing, intensity, and type of precipitation received; runoff patterns based on the amount of precipitation falling as snow and when snowmelt occurs; and atmospheric temperatures, which exhibit a strong influence on water temperatures. Climate change models generally agree that the southwest will get drier in the next century, with runoff decreasing 8 to 25 percent (Seager et al. 2007), resulting in decreased water availability to meet all demands, including those of terrestrial wildlife, fish, and plants.

Listed plant species, along with general vegetation, would be affected by climate change and associated changes in precipitation and atmospheric temperatures. Many plant populations have been observed to decrease during periods of drought. Because special status plant species are often endemic to a restricted set of geological formations and have limited dispersal ability, climate change may threaten the long-term persistence of these species. Long-lasting drought cycles could have a negative effect on the long-term viability of plant populations. Periods of drought in the southwest are not uncommon. However, the frequency and duration of droughts may be altered by climate change. Changes in precipitation patterns that lead to either wetter or drier conditions for narrow endemics could lead to conditions that are no longer suitable for their survival. In addition, climate changes could lead to the establishment or spread of non-native plants, to the detriment of some species. Almost certainly, plant species and their habitats will be affected in some manner by climate change; the magnitude and extent of the change cannot be quantified at this time.

The effects of climate change have the potential to affect many species of wildlife, including listed wildlife species, and have the potential to change regional climate patterns, which exhibit a strong influence on water availability, which could influence the health and abundance of existing habitats across the region. Change in precipitation patterns and

atmospheric warming would likely affect the distribution of suitable habitat for wildlife species, as terrestrial landscapes adapt to these changes. Fire frequency and severity may increase as a result of these changes, which may further affect the distribution of the habitats that species depend upon. Wildlife species will likely change their distribution or behavior in response, selecting alternate home range and migration habitats. These combined factors could have any number of effects on wildlife including shifts in the distribution of individual species, along with major prey species and potential competitors and predators, possibly along elevational or latitudinal gradients; effects on demographic rates, such as survival and reproduction; and changes in coevolved interactions, such as prey-predator relationships.

Mobile organisms can move and select alternate home range habitats and migratory habitats in response to climate changes and seasonal wildlife patterns would shift to more favorable habitats as a behavioral adaptation to changing climate conditions. Wildlife species are expected to alter migration patterns, as they could migrate to suitable habitats earlier or later in the year. Similarly, wildlife species might benefit from the longer growing season before entering their first winter, but other challenges may present themselves, such as insufficient water, inadequate habitat, or decreased food supply. These factors cannot be adequately predicted at this time.

The predicted reduction in precipitation will make it increasingly challenging to meet the flow recommendations for the San Juan River established to protect listed fish and other native fish species, especially the high-flow requirements that provide for channel maintenance and create habitat for listed fish and which have a strong influence on the riparian habitats upon which many species rely.

Reduced flow levels may also exacerbate contaminant issues, as less dilution of contaminants in the river would occur. Additionally, if increased water is required for agricultural uses, it could result in increased runoff of pesticides and selenium from agricultural return flows. However, as water becomes more valuable, return flows are more likely to be recaptured and reused, rather than running off into the rivers, streams, and lakes.

Native fish in the San Juan River cannot move upstream in response to climate changes because their migration is blocked by Navajo Dam (USFWS 2002a, b), which precludes migration to what may be more favorable upstream areas as a behavioral adaptation to changing climate conditions. However, Navajo Dam currently releases water that is colder than what would naturally be present during the summer and fall months (USFWS 2006). Thus, the temperature effect of climate change could be offset by the dam's operation.

The social cost of carbon (SCC) is a monetization of the effects associated with an incremental increase in carbon emissions. It is intended to quantify climate change-induced effects to net agricultural productivity, human health, property damage from increased flood risk, the value of ecosystem services, and other factors. No Federal, tribal, or state rules or regulations currently limit or curtail emissions of GHGs from FCPP, Navajo Mine, or other sources in the state of New Mexico or Navajo Nation. Also, notwithstanding the

GHG reporting rule, no Federal regulations currently limit or curtail GHG emissions of CO₂ and CH₄, and EPA cap-and-trade programs currently apply only to acid rain precursors SO₂ and NO_x (EPA 2012e). Therefore, at present no regulatory mechanism exists for assessing the significance of the GHG emissions. Qualitatively, the societal costs of GHG emissions and climate change generally refer to the financial, environmental, and societal costs resulting from sea level rise, diminishing water supplies, loss of plant and wildlife species, changes in ecosystems, increased wildfires, etc. These issues are addressed in detail in reports prepared by the IPCC referenced in the EA.

In Federal rulemaking proceedings, Executive Order 12866 requires that agencies “assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs.” In the context of including the SCC in cost-benefit analysis for rulemaking, a 12-member Interagency Working Group¹ was formed to assess the calculation of SCC. The Interagency Working Group released its initial Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis in February 2010, which was subsequently updated in May 2013.

According to the Interagency Working Group (2010): “[i]t is important to recognize that a number of key uncertainties remain, and that current SCC estimates should be treated as provisional and revisable since they will evolve with improved scientific and economic understanding. The interagency group also recognizes that the existing models are imperfect and incomplete. The National Academy of Science (2009) points out that there is tension between the goal of producing quantified estimates of the economic damages from an incremental ton of carbon and the limits of existing efforts to model these effects.”

In particular, “[t]he choice of a discount rate, especially over long periods of time, raises highly contested and exceedingly difficult questions of science, economics, philosophy, and law. Although it is well understood that the discount rate has a large influence on the current value of future damages, there is no consensus about what rates to use in this context” (Interagency Working Group 2010).

Draft Guidance on climate change analysis was published by the CEQ in December 2014, and indicates that emissions monetization is not required in every project-level NEPA analysis:

“Monetizing costs and benefits is appropriate in some, but not all, cases and is not a new requirement. A monetary cost-benefit analysis need not and should not be used in weighing the merits and drawbacks of the alternatives when important qualitative considerations are being considered. If a cost-benefit analysis is relevant to the choice among different

¹ Council of Economic Advisers; Council on Environmental Quality; Department of Agriculture; Department of Commerce; Department of Energy; Department of Transportation; Environmental Protection Agency; National Economic Council; Office of Energy and Climate Change; Office of Management and Budget; Office of Science and Technology Policy; and Department of the Treasury.

alternatives being considered, it must be incorporated by reference or appended to the statement as an aid in evaluating the environmental consequences. When an agency determines it is appropriate to monetize costs and benefits, then, although developed specifically for regulatory impact analyses, the Federal SCC, which multiple Federal agencies have developed and used to assess the costs and benefits of alternatives in rulemakings, offers a harmonized, interagency metric that can provide decision makers and the public with some context for meaningful NEPA review. When using the Federal SCC, the agency should disclose the fact that these estimates vary over time, are associated with different discount rates and risks, and are intended to be updated as scientific and economic understanding improves.”

OSMRE chose to include emissions monetization of SCC in this EA according to the Interagency Working Group methods to provide further context and enhance the discussion of climate change impacts in the NEPA analysis.

Comment 46

Shiloh Hernandez, Staff Attorney

The EA’s conclusion with respect to GHG emissions is arbitrary and capricious. While the EA does take the time to assess the social cost of carbon (SCC), the assessment is unreasonable and irrational. Inexplicably, the EA determines that the GHG emissions would be identical in all alternatives. EA at 346. This despite the fact that the EA repeatedly states that the no action alternative could lead to a reduction in mining and potential closure of the mine and power plant. The EA’s ultimate conclusion that the climate impacts from the continued expansion of the mine would be “minor in the short- and long-term.” EA at 347. This conclusion simply does not follow, given that the GHG emissions will cause, by a modest analysis, \$2.5 BILLION in damages. *See* EA at 346. By comparison, this is greater than all the direct and indirect value that the project is expected to generate over this period of time. *See* EA at 383. Further, the SCC has been repeatedly criticized as a significant underestimate of the actual harm caused by GHGs, as the Citizens Groups noted in our prior comments.¹ By this same measure, the EA’s conclusion that no GHG mitigation is require on the basis that the \$2.5 billion in harm is not “a major contribution to adverse effects associated with climate change” is arbitrary and capricious. *See* EA at 348.

Response

The Navajo Mine is the sole supplier of coal to FCPP, and the Pinabete Permit Area of the Navajo Mine has been permitted under a separate permit application process that concluded in June 2015. Under the No Action Alternative, the combustion-related impacts at the FCPP would remain as described for the Proposed Action through July 2016 as the current coal stockpiles are used. The SCC for the No Action Alternative is the same as under the Proposed Action Alternative, because it is reasonably assumed that FCPP will continue to operate at current levels through 2016. Following July 2016, should additional mining not be approved in Area IV North, NTEC may elect to proceed with mining in the Pinabete Permit Area under a revised SMCRA permit, subject to OSMRE approval. Alternatively, under the No Action Alternative, the Navajo Mine and FCPP could potentially shut down once all coal reserves are combusted. The effects of this shut-down has been evaluated in

¹ Letter from WELC, to Calle & Williamson, OSM (Feb. 18, 2005) (attached as Exhibit 1).

Section 4.2.4.5 of the FCPP/NMEP EIS and this discussion is incorporated by reference as follows from the EA:

Under the No Action Alternative, the currently permitted supply of coal from Navajo Mine SMCRA Permit Area would run out in 2016, and mining operations and resultant emissions would permanently cease. Since the mine is the sole supplier of coal to FCPP, power plant operation and resultant emissions would also permanently cease in 2016. Navajo Mine would be closed and FCPP would be decommissioned. [Table 4.6-7] shows estimated stationary and mobile source emissions under this scenario during 2014 and 2015. Beginning in 2016, mine closure would involve reclamation and conservation work, and power plant decommissioning would involve dismantling and salvage work; however, not all of these tasks are presently defined, therefore this analysis is beyond the scope of this study. Emissions resulting from equipment used to demolish and abandon FCPP (post 2016) would be minor in comparison to the action alternatives.

With respect to the significance of the issue, no Federal, tribal, or state rules or regulations currently limit or curtail GHG emissions from FCPP, Navajo Mine, or other sources in the state of New Mexico or Navajo Nation. Federal and tribal stationary source regulations require monitoring, record keeping, and reporting of GHG emissions from FCPP; however, they do not apply to Navajo Mine since it does not meet the definition of a stationary source (i.e., consists of mobile source equipment only). As such, there are no numerical criteria to determine the level of significance (such as an air quality standard or a national ambient air quality standard).

In June 2014, EPA issued the “Clean Power Plan” proposal to cut carbon pollution from existing power plants. Although not a significance criterion, the proposal establishes state-by-state goals to reduce GHGs by 2030. The focus is on power plants, but states have discretion to meet goals with a combination of industries. The proposed regulation is draft at this time, and is subject to revision or rejection subject to comment and finalization. Additionally, tribal lands are not given goals at this time. A proposed timetable is suggested for moving into the process with tribes, with July 2017 being when EPA would have a proposed goal for tribal lands. States are given a year to establish programs, with a provision for a 2-year extension; therefore, 2020 is when states are required to have a program in place. Programs for compliance by tribes will likely happen a year or two later, with the compliance timeframe adjusted accordingly. Proposed requirements in the plan were not analyzed in the EA because of the uncertainties associated with whether the plan will be adopted or modified, and how it would be implemented on the Navajo Nation. Although EPA’s Federal Implementation Plan for Best Available Control Technology for the FCPP did not explicitly include GHG reductions, the option selected by APS would reduce GHG emissions from FCPP by 26 percent compared to levels in 2005 (the baseline for the Clean Power Plan). Therefore, although the Climate Action Plan would not constitute a numerical significance criterion, it is noteworthy that the GHG reductions at FCPP during the remaining time that Area IV North coal would be combusted is close to the goal in the Plan.

The comment argues that the SCC method underestimates costs. In fact, the IWG discussion of the method acknowledges that there is a wide range in the estimates, including overestimates. Calculations of the SCC are laden with uncertainties; according to the IWG: “[i]t is important to recognize that a number of key uncertainties remain, and that current SCC estimates should be treated as provisional and revisable since they will evolve with improved scientific and economic understanding. The interagency group also recognizes that the existing models are imperfect and incomplete. The National Academy of Science (2009) points out that there is tension between the goal of producing quantified estimates of the economic damages from an incremental ton of carbon and the limits of existing efforts to model these effects.” (IWG 2010).

Such uncertainties include the quantitative value placed on greenhouse gas emissions, which is controversial and uncertain. Social cost estimates for a ton of carbon dioxide emitted range from \$5 to over \$800 (Interagency Working Group 2010; F. Ackerman & E. Stanton, *Climate Risks and Carbon Prices: Revising the Social Costs of Carbon*, 2010). In addition, “[t]he choice of a discount rate, especially over long periods of time, raises highly contested and exceedingly difficult questions of science, economics, philosophy, and law. Although it is well understood that the discount rate has a large influence on the current value of future damages, there is no consensus about what rates to use in this context.” (IWG 2010)

The decision is not arbitrary because it is entirely systematic and compliant with current guidance for this type of analysis, indeed goes beyond current guidance by including SCC. This is as hard a look as current science and resource economics allows.

This is not capricious, because the basis for the decision was clearly stated, and the basis supports the conclusion. Lacking a regulatory or legislative significance criterion, this method of drawing conclusions of significance is defensible.

Comment 47

Shiloh Hernandez, Staff Attorney

The conclusion of the EA (and FONNSI) that no significant impacts will result ignores the fact that San Juan County is expected to be in of non-attainment of National Ambient Air Quality Standards (NAAQS) throughout the coming years due principally to the emissions from SJGS and FCPP, which the Navajo Mine supplies, along with oil and gas operations. EA at 213. Because, the ozone standard has now been set at 70 ppb possibly placing San Juan County in non-attainment status. Health studies show that ozone is currently causing health impacts in San Juan County. Salvatore & Dee, Community Health Improvement Council, *San Juan Community Health Profile* 28 (Jan. 2010). This is particularly troubling because “San Juan County is the worst county in New Mexico for release of toxic materials to the environment, and is ranked in the top 10% of worst counties in the United States for toxic releases to the environment.” *Id.* Also, “San Juan County is in the top 10% of the worst counties in the United States for PM-2.5 emissions, PM-10 emission, and sulfur dioxide emissions. Area power plants are the major contributor to these three pollutants.” *Id.* San Juan County suffers higher rates of chronic lower respiratory disease than the average rate in New Mexico or the United States more broadly. *Id.*

Response

The EA has been revised at Sections 3.5.1, 3.6.2, 4.5.2 and 5.2.5 to address the new ozone NAAQS of 70 ppb, including an assessment of the effects of coal combustion on the potential future attainment status. On December 17, 2014, EPA published a proposal to revise the NAAQS standard for O₃ from the current 75 parts per billion (ppb) to 65 - 70 ppb (Federal Register 75234). The purpose of publishing a draft proposal is to solicit comments from the public, other Federal agencies, state and local governments, and industry. After consideration of comments, EPA promulgated a final rule of 70 ppb in November 2015. Because of the uncertainty in the final decision timing during the preparation of the EA, and the uncertainty related to implementation of any new standards, the impact analysis was been conducted against the then-current promulgated O₃ standard of 75 ppb, as to do otherwise would have been speculative.

However, considering the new NAAQS standard for O₃ of 70 ppb, the FIP for BART at FCPP addressed O₃ emission **reductions**. The EPA addressed NO_x emissions from the FCPP, the primary O₃ precursor compound emitted from the boiler stacks. In this final action, EPA required FCPP to reduce NO_x emissions. Because reducing NO_x emissions from FCPP would not be the sole cause of any change in regional O₃ concentrations, whether upward or downward, under a new standard, the proposed rule would not lead to a change in the assessment of significance. Furthermore, the proposed change to the NAAQS would not require a General Conformity determination, as explained in the FCPP/NMEP EIS (OSMRE 2015).

See comment 48 for the relevance of NAAQS.

Comment 48

Shiloh Hernandez, Staff Attorney

Moreover, the EA's analysis of the significance of the impacts of air pollution is inadequate. It is an error of law for the EA to use Clean Air Act significance criteria to assess the magnitude of the very different significance determination required by NEPA. The EA relies repeatedly on supposed compliance with the outdated ozone NAAQS standard of 75 ppb to conclude that impacts from air pollution from FCPP will be insignificant. *See* EA at 111, 331, 390. However, contrary to the EA's conclusions, the current NAAQS standard for ozone is 70 ppb.¹ Contribution to non-compliance with environmental standards is a significance factor under NEPA. 40 C.F.R. § 1508.27(b)(10).² OSM can hardly continue to blame the impacts of excessive ozone pollution on inadequately vented residential heating equipment. OSM must prepare an EIS to discuss at length the significant harmful impacts from excessive ozone exposure. Further, the scientific research on which the recent amendment of the ozone standard was based showed that, while

¹ EPA, Regulatory Actions, Ozone Standards, <http://www3.epa.gov/ozonepollution/actions.html> (last visited Nov. 24, 2015) ("On October 1, 2015, EPA strengthened the National Ambient Air Quality Standards (NAAQS) for ground-level ozone to 70 parts per billion (ppb), based on extensive scientific evidence about ozone's effects on public health and welfare.").

² For this same reason, continued deposition of selenium from FCPP emissions will contribute to the existing selenium impairment of the San Juan River. EA at 288. This contribution to violation of environmental standards also evidences the significance of this project, warranting preparation of an EIS. 40 C.F.R. § 1508.27(b)(10).

the 70 ppb standard may be sufficient to protect health adults, it is not sufficient to protect vulnerable populations, such as the elderly, the young, and people with compromised respiratory systems. We discussed this issue at length in prior comments on OSM's prior EIS. The EIS never addressed this issue. Those comments are attached and incorporated here in full by reference.¹ Further, as noted in the Citizens Groups prior comments, ozone levels in the Four Corners area have been increasing in recent years and often exceeding the 70 ppb ozone NAAQS threshold (these comments are, as mentioned, already in OSM's possession, and are incorporated here by reference, including Exhibit 29, the report by Victoria Stamper²). OSM's EA, however, excludes this information by only including stale ozone information from nearly a decade ago, 2008 to 2010. EA at 3.5-14.

Response

The Proposed Action would result in the same levels of O₃ precursor emissions. Ambient air modeling found that these emissions would not cause a measurable change in ambient PM₁₀ or PM_{2.5} concentrations in San Juan County, New Mexico. San Juan County is currently in "attainment" status and ambient air quality does not regularly exceed the NAAQS. Therefore, there would be no substantial adverse public health consequences for this alternative. A detailed analysis supporting this conclusion is provided in the EA. The air pollutant of primary public health concern associated with mining in Area IV North is fugitive dust containing PM₁₀. PM₁₀ and PM_{2.5} emission sources include blasting, overburden removal, coal extraction, transport, and handling, and general operation of mine vehicles and equipment. Operation of mine vehicles and equipment also produces emissions of other criteria pollutants, mainly CO, SO₂, NO_x, and VOCs.

The EA extensively considers the proximity to sensitive receptors and vulnerable populations. The FCPP generating units are located more than 1/2 mile from any sensitive land uses such as schools, hospitals, and senior citizen centers. The nearest sensitive receptors are homes located greater than 1 mile from the FCPP.

To assess whether compliance with these NAAQS is protective of health for sensitive populations, an alternative risk analysis was also applied to particulate matter whereby coal dust metal concentrations in PM_{2.5} were estimated using metal concentrations for Navajo Mine coal reported by Bunnell et al. (2010) and assuming PM_{2.5} concentrations were equal to the primary NAAQS for PM_{2.5} of 12 µg/m³. Excess cancer risks and hazard quotients were calculated using EPA (2013) residential air regional screening levels (RSLs) as toxicity benchmarks.

The risk analysis for PM_{2.5} shows that the metals present in Navajo Mine coal and likely to be present in fugitive dusts at the primary NAAQS for PM_{2.5} of 12 µg/m³ would not pose an unacceptable risk to public health. As shown in... [the table below], all excess cancer risks are less than the target risk level of 1 x 10⁻⁶ and all hazard quotients are less than the target hazard quotient of 1 for residential exposures. The Proposed Action would result in the same levels of O₃ precursor emissions as the existing operations. Therefore,

¹ Letter from WELC, to Calle & Williamson, OSM (Feb. 18, 2005).

² Attached as Exhibit 2.

no substantial adverse public health consequences from criteria air pollutants would occur for the Proposed Action and the NAAQS are an appropriate significance criterion.

See response to comment 47 for ozone standard.

Comment 49

Shiloh Hernandez, Staff Attorney

Furthermore, the EA fails entirely to address the cumulative impacts of mercury pollution from the mine and FCPP (in addition to SJGS). This is troubling because “mercury is a pollutant that is of particular concern in the Four Corners region. Mercury is released into the environment from coal-fired power plants and from mining. . . . Mercury is a heavy metal that builds up and remains in the ecosystem and can be found in toxic levels in fish in many areas in San Juan County. Even in small amounts, mercury can cause a variety of physiological problems, illness, and even death, according to Dr. Grossman, a Durango physician researching the effects of mercury on pregnant women and their newborn infants.” *Id.* Despite the fact that many waterways in the Four Corners region are contaminated by mercury and include impacts of mercury from burned coal at FCPP via Navajo Mine, the Revised EA for Navajo Mine Area IV North Permit Revision Application ignores the serious problem of mercury. The EA does not discuss the Navajo Mine’s indirect impact of mercury emissions to water resources. As mentioned above, mercury is released into the environment from coal mines and coal fired power plants and is found in toxic levels in fish in many areas of San Juan County. Nevertheless, the EA fails to discuss the cumulative impacts of mercury pollution that is caused directly or indirectly by the Navajo Mine. Given the history of the Navajo Mine series of EAs, it is alarming that OSMRE continues to turn a blind eye to mercury impacts in the Revised EA for Navajo Mine Area IV North Permit Revision Application.

Response

Quantification of mercury emissions from FCPP, regional sources, and global sources, was a major area of focus in the EA, and the Endangered Species Act consultation conducted by OSMRE concurrent with the EA process. Effects of mercury were considered to humans, endangered species, vegetation, wildlife, water resources, and soils. A few major findings are summarized below.

Air Quality

Coal-fired power plants are the largest source of mercury and acid gas emissions in the U.S. and are responsible for about 50 percent of mercury emissions and about 77 percent of acid gas emissions. Most mercury deposited in the western U.S., however, originates in Asia (Strode et al. 2008). Peer-reviewed scientific literature shows that mercury emissions from Electric Generating Units in the U.S. enhance mercury deposition and the response of ecosystems in the U.S. (77 Federal Register 9339). Other toxic metals emitted from power plants include arsenic, chromium, hexavalent chromium, nickel, and selenium (EPA 2013a).

When elemental mercury from the air reaches surface waters via direct and indirect deposition, microorganisms can convert it into methylmercury, a highly toxic form that bio-accumulates in fish. Humans are primarily exposed to mercury by eating contaminated fish. Methylmercury exposure is a particular concern for women of childbearing age,

fetuses, and young children because studies have linked high levels of methylmercury to damage to the developing nervous system, which can impair children's ability to think and learn. Mercury and other power plant emissions also damage the ecological environment (EPA 2013a).

On December 16, 2011, the EPA issued the final Mercury and Air Toxics Standards (MATS) and Utility NSPS rulemakings which were published in the Federal Register on February 16, 2012 (77 Federal Register 9304). Promulgated as 40 CFR 63 Subpart UUUUU – National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Coal- and Oil-Fired Electric Utility Steam Generating Units, the MATS rule establishes emission limitations and work practice standards for HAPs emitted from coal- and oil-fired electric utility steam generating units along with requirements to demonstrate initial and continuing compliance with the HAP emission limits.

The MATS emissions limits are based on existing control technologies that are widely available and commonly used in the electric utility industry such as electrostatic precipitators, fabric filters (baghouses), flue gas desulfurization (scrubbers), or dry sorbent injection. For existing controlled units such as FCPP Units 4 and 5, which are equipped with baghouses and scrubbers, compliance can be achieved by April 16, 2015, and maintained as described in detail in the FCPP/NMEP EIS (OSMRE 2015).

On March 28, 2013, the EPA finalized updates to certain emission limits for new power plants under the MATS rule, including mercury, PM, SO₂, acid gases, and certain individual metals. Additionally, certain testing and monitoring requirements that apply to new sources were adjusted. The new standards affect only new coal- and oil-fired units that will be built in the future (78 Federal Register 24073). The update does not change the final emission limits or other requirements for such existing power plants as FCPP.

Annual sampling data from four Mercury Deposition Network (MDN) sites located at Sycamore Canyon, Molas Pass, Mesa Verde, and Navajo Lake is compared and aggregated to provide a general estimate of historic mercury deposition in the Four Corners region. Total mercury deposition (organic + elemental) is calculated by NADP in units of nanograms per square meter (ng/m²) based on the amount of sample collected in the wet bottle in equivalent millimeters (mm) times its mercury concentration in nanograms per liter (ng/l). In contrast to NTN, precipitation gage data are not used for data reduction since the bottle quantity is a more precise measurement for trace quantities (NADP 2013).

For the historic 10-year period from 2002 through 2011, individual site results are shown in Table 3.5-30 comprising absolute units of ng/m² and kg/ha, and normalized units of ng/m²-mm as reported by MDN on a discrete sample basis (NADP 2013). Since the number of sites and samples is not large, absolute percent difference (variation) about the weighted arithmetic mean is shown to assess measurement variability (consistency) from year-to-year.

Table 3.5-31 aggregates the results shown in Table 3.5-30 to provide a general estimate of region-wide mercury deposition rates over the 10-year period. Figure 3.5-7 illustrates these

normalized mercury deposition rates in units of ng/m²-mm. For consistency with NTN precipitation data from multiple (7) rain gages over 12 years, Table 3.5-31 correlates MDN trending results against NTN precipitation amounts to obtain estimated mercury deposition as if it were an NTN parameter, as illustrated on Figure 3.5-8.

The normalized MDN results shown in Table 3.5-31 and Figure 3.5-7 suggest an upward trend in the rate of mercury deposition in the region over a decade. As shown in Table 3.5-31, from 2000 to 2011, the estimated average trending deposition rate increased by about 6 ng/m²-mm or about 40 percent overall with an average annual variability of less than 20 percent, which indicates that results are reasonably consistent overall. The trending analysis suggests that mercury deposition in the Western region has been increasing.

While increases are due in part to trans-Pacific transport of mercury from sources in Asia (refer to Section 4.8, Special-Status Species for a more detailed discussion), electric generating units (EGUs) coal-fired power plants are the largest source of mercury emissions in the U.S. Mercury is emitted from EGUs in three forms; each of which has specific physical and chemical properties that determine how far it travels in the atmosphere before depositing to the landscape. Although gaseous oxidized mercury and particle-bound mercury are generally local/regional mercury deposition concerns, all forms of mercury may deposit to local or regional watersheds. U.S. coal-fired power plants account for over half of the U.S. controllable emissions of the quickly depositing forms of mercury (Federal Register 2012). According to the EPRI baseline scenario modeling results, the maximum contribution of FCPP mercury emissions to mercury total deposition is about 28 percent in San Juan County near the FCPP and contributions from FCPP range from 2 to 28 percent in the vicinity of the plant; however, the contributions from FCPP are less than 2 percent over the remainder of the San Juan basin (EPRI 2013).

“In addition to potential water quality impacts resulting from operations at the plant lease site itself, coal-fired power plants represent a source of atmospheric mercury and selenium in the Four Corners region. As emissions deposit in the region, recent studies have determined that emissions from coal-fired power plants in the region contribute mercury, selenium, and other pollutants to local surface waters (EPRI 2013). Because prevailing winds are generally from the southwest to the north and northeast, emissions from the FCPP have the potential to affect surface water quality beyond the Navajo Nation. Air quality modeling and emissions deposition modeling have defined the area that would be affected by FCPP emissions as less than 50 km (31 miles). ...[Post July 2016 I]t is estimated that the FCPP would emit approximately 136 pounds of mercury and 566 pounds of selenium annually for the duration of the Project. The emitted mercury and selenium would consist of both particulates and vapors. However, ... these emissions would represent a 72 and 93 percent reduction over baseline conditions. Therefore, while mercury and selenium would continue to be deposited into the San Juan River watershed, surface water quality impacts would be minor compared to baseline conditions.”

Therefore, for the post-2014 period under consideration in this EA, deposition of mercury and selenium would occur within the modeled deposition area at a rate of approximately

136 pounds of mercury and 566 pounds of selenium per year. Deposition of metals from FCPP between 2012 and 2014 when all 5 units were operational are considered to be equivalent to the estimated historic deposition values, presented in Table 4.1-8 of the FCPP/NMEP EIS for the period of 2000-2011, of 719 pounds of mercury and 11,262 pounds of selenium per year. Therefore, for the entire 2012-2016 period average deposition values are estimated to be 428 pounds of mercury and 5,914 pounds of selenium per year, which would represent a 40 and 47 percent reduction over baseline conditions. Although baseline water quality conditions in the San Juan River are impaired (TMDLs have been set for selenium, sedimentation, and bacteria), the reduced emissions and associated deposition from 2012-2016 represent a moderate impact compared to deposition prior to 2012.

Vegetation and soils

In both the Deposition Area ERA and the San Juan River ERA, current conditions were characterized as measured COPEC concentrations in soil, sediment, surface water, and fish tissue. It is reasonable to assume that these media concentrations integrate past and present contributions over space and time that are of natural origin with those of anthropogenic origin including local, regional, and global sources, as well as historical FCPP impacts over the past 50 years. While it is not possible to accurately estimate the contribution of COPECs from each of these sources, it is possible to put the soil metals concentrations in perspective with soil metals concentration reported by the USGS for New Mexico and the continental U.S. Table... [4.7-5] compares maximum soil metals concentrations recently measured within the future FCPP deposition area (e.g., current conditions) with the range of soil metal concentrations reported for the U.S. From the comparison of these data, it can be seen that recently measured soil metals concentrations within the future FCPP deposition area are generally within the range reported by the USGS for New Mexico and for the U.S. While regional variation in soil metals concentrations would be expected across the U.S., these data show that the metals concentrations currently within the deposition area (e.g., current conditions) would not be unexpected based on geological origin alone. However, it is also possible that metals concentrations measured in soils across the U.S. by the USGS in 1984 reflect a mixture comprising both a natural geologic source as well as long-term historical anthropogenic contributions. Regardless of source, the current conditions data relates directly to past and present cumulative impacts since they integrate across time and space all local, regional, and global sources including naturally occurring metals and those released from the first 50 years of FCPP emissions that may have been deposited in the San Juan basin.

For future FCPP emissions, the deposition of COPECs within the Deposition Area was shown to have a negligible impact, with all plant HQs resulting from FCPP emissions well below 1 for all COPECs, and that these emissions would not contribute appreciably to those risks that are already present under baseline conditions, or cause the concentrations of any COPECs currently below levels of concern to increase to a level of concern. Over the life of the project, sources other than the FCPP and NMEP would be expected to contribute COPECs to the local environment. Other local sources of COPECs include other power

plants within the region (e.g., SJGS), as well as industrial and municipal discharge, runoff and emissions, vehicle emissions, and agriculture. Mercury, selenium and arsenic are global pollutants and these pollutants may be contributed from sources thousands of miles away from the San Juan River watershed. These other sources would be expected to increase the levels of some COPECs above those anticipated to occur from future FCPP operations and baseline conditions, but these increases have not been quantified.

Wildlife and water

Other cumulative water quality impacts could result from deposition of pollutants emitted from power plants in the region (e.g. FCPP, SJGS, and Navajo Generating Station). This was addressed in the FCPP/NMEP EIS, Section 4.18.3.5 (OSMRE 2015) and is incorporated by reference below:

Other than impacts associated with sedimentation and flow, surface water quality impacts are associated with deposition of metals and particulate matter emitted from the FCPP. Although modeling and ecological risk assessments...found that the depositional area of emissions from the FCPP is less than 50 km, 16 other power plants are located in the ROI. The cumulative deposition of metals caused by emissions from the FCPP in combination with the 16 other power plants in the region could result in potentially major impacts to water quality....Mercury and selenium deposition as a result of the FCPP is expected to decrease over the Project period and therefore, the FCPP contribution to potential cumulative impacts to surface water quality would also decrease proportionally over time.

Because the Proposed Action would not contribute to the deposition of metals in surface waters in the region, no cumulative impact would occur.

The results for non-special status wildlife and fish are presented in Tables 4.8-1 and 4.8-2, respectively. ERA results for special status wildlife and fish are presented in Section 4.8.4. The ERA results show that HQs for some metals exceed 1 for some species under current conditions, indicating a potential for adverse ecological impacts to wildlife. The ERA results also show that all wildlife HQs for the Proposed Action are well below 1 and with two exceptions contribute less than 1 percent to the Total HQ. The two exceptions are willow flycatcher exposure to methylmercury in Morgan Lake and willow flycatcher exposure to mercury in the San Juan River, corresponding to 4.4 percent and 8.7 percent contributions to the Total HQ, respectively. The ERA results show fish HQs exceeding 1 under current conditions indicating a potential for adverse ecological impacts to fish already exist. The ERA results also show that fish HQs for the Proposed Action are well below 1 and contribute less than 1 percent to the Total HQ. The San Juan River ERA also evaluated potential risks to fish in the San Juan River downstream to San Juan River arm of Lake Powell for arsenic, mercury, and selenium (AECOM 2013b). Wildlife and fish HQs reported in the risk assessment for San Juan River reaches downstream of the deposition area and into the San Juan River arm of Lake Powell were on the same order of magnitude as reported for the San Juan River within the deposition area, with contributions from future emissions from FCPP to the Total HQs being less than 1 percent for all constituents and receptors evaluated. These ERA results are based on 25 years of continued

operation of FCPP. The emissions associated with operations from 2012 to 2016 would be a fraction of this, and would have a lesser impact. Based on these evaluations, while risks associated with chemical exposure occur within the ROI under current conditions, no substantive additional risks to wildlife and fish are expected to occur within the deposition area as a result of operations of the FCPP from 2012 to 2016, and impacts from the Proposed Action are not expected to increase the concentration of metals whose current HQ is less than 1 to a level of concern.

As a result of the past, present, and reasonably foreseeable emissions from power plants in the region, as well as other sources of emissions (e.g., coal burned in private homes), as well as global sources of mercury, selenium, and arsenic, the potential exists for cumulatively major impacts to aquatic species, such as the pikeminnow and razorback sucker. For all COPECs and ecological receptors evaluated, HQs exceeding 1 were entirely due to current background conditions. As modeled in the two ERAs, the contribution of FCPP to this potential cumulative effect would be significantly less than historic conditions, and with the shutdown of Units 1-3, represents a decline over baseline emissions (OSMRE 2015).

Cumulative impacts associated with past, present, and future conditions may be substantial (regardless of future global emissions of mercury, selenium, and arsenic) to Colorado pikeminnow, and razorback sucker. This may also affect southwestern flycatcher and yellow-billed cuckoo, should suitable nesting habitat become available in the Deposition Area in the future. However, this risk would remain with or without the future operation of FCPP, as indicated in the ERAs. The emissions associated with the operation of FCPP from 2012 to 2016 would not meaningfully increase those risks. Therefore, the contribution of future FCPP operations would not be cumulatively substantive with respect to these ecological risks (OSMRE 2015).

In addition, OSMRE prepared a separate BA addressing the deposition of emissions from the FCPP from coal burned during the time period of the Proposed Action, from September 1, 2015 to July 6, 2016 in accordance with the Section 7 of the Federal Endangered Species Act. The BA concludes that the project “may affect but is not likely to adversely affect” the Colorado pikeminnow and razorback sucker, southwestern willow flycatcher and yellow-billed cuckoo, as a result of deposition of emissions from the FCPP. Given the limited term of the Proposed Action, the fact that the environmental conditions beginning in January 2016 will include legally binding conservation measures and reasonably prudent measures that will ameliorate the conditions for the listed species, the incorporation of conservation measures in the Proposed Action to (1) not authorize mining of Area IV North coal until after the 2015 spawning season for Colorado pikeminnow and razorback sucker, and (2) to temporarily shut down the San Juan River water intakes during the fall 2015 stocking season for these fish species, OSMRE concludes that the Proposed Action will not affect the continued existence of endangered or threatened species or result in destruction or adverse modification of their critical habitats, as determined under the ESA of 1973 (16 USC 1531 et seq.). The analysis includes species considered threatened or endangered by the Navajo Nation. This is discussed in greater detail in 4.9.2.1.4.

The contribution from other regional and global sources of mercury, selenium, and arsenic was also evaluated. These contaminants have the potential to adversely affect special status species both within the Deposition Area, which extends beyond the FCPP lease area, and on the aquatic environment in the San Juan River downstream of Farmington. For future FCPP emissions, the deposition of COPECs within the Deposition Area was shown to have a negligible impact, with all wildlife and fish HQs resulting from FCPP emissions well below 1 for all COPECs, and that FCPP emissions would not cause the concentrations of any COPECs currently below levels of concern to increase to a level of concern, or contribute appreciably to those risks that are already present under existing background conditions. Over the life of the project, sources other than the FCPP and NMEP would be expected to contribute COPECs to the local environment. The EPRI model examined the projected future contribution of arsenic, mercury, and selenium from other regional and global sources, as these COPECs are globally distributed. These results focus on impacts to listed fish species and are discussed in Section 5.2.9. Other COPECs are not expected to receive significant contributions from atmospheric deposition from out-of-basin sources. Other local sources of COPECs include other power plants within the region (e.g., SJGS and NGS), as well as industrial and municipal discharge, runoff and emissions, vehicle emissions, and agriculture. These other sources would be expected to increase the levels of some COPECs above those anticipated to occur from future FCPP operations and baseline conditions, but have not been quantified.

Human Health and Environmental Justice

The burning of coal to fire boilers for energy generation at FCPP would result in the deposition of mercury and other contaminants in soils and surface waters. Crops and farm products grown in these crops are ingested by humans, as with fish harvested from local waters. Even in the worst-case scenario, assuming high consumption of fish and local farm products, risk assessment indicates that exposure would be below thresholds protective of human health. In December 2013, Units 1-3 were shut down per the CAA FIP agreement between APS and EPA. The resulting reduction in energy production would result in less overall emissions from FCPP; however, the emissions resulting from the burning of Area IV North coal would remain static between the past operations phase and the continued operations phase.

Extensive analysis on ambient air monitoring, FCPP emissions modeling, adherence to NAAQS, and human health risk assessments (HHRAs) was performed as part of the EA. The objective of that environmental justice analysis is the same for this EA – to evaluate both the Proposed Action’s contribution of harmful contaminants in the ambient air and whether or not that contribution has a disproportionate impact on the local population. The following sections summarize the findings of the EIS analysis and incorporate these conclusions by reference into this EA.

An HHRA was performed to evaluate the health effects of HAP emissions from FCPP Units 4 and 5 (AECOM 2013d). The emissions characterization, dispersion, deposition,

and fate and transport modeling conducted for the HHRA also supports the Deposition Modeling Study for the ERA.

The HHRA was conducted according to the HHRA Protocol (protocol) established by the EPA (2005b) for hazardous waste combustion facilities, which is also considered appropriate for coal-fired power plants. As such, the HHRA includes the five standard steps of risk assessment:

Hazard Identification. Selects the compounds of potential concern (COPC), also referred to as “target compounds,” both organic and inorganic. Mercury was a COPC.

Dose Response Assessment. Reviews the published risk factors developed by regulatory agencies to account for carcinogenic and noncarcinogenic (acute and chronic) health effects of chemical exposure.

Exposure Assessment. Involves modeling the dispersion, deposition, and fate and transport of COPCs in the environment and various pathways (i.e., inhalation, ingestion, absorption) by which individuals may be exposed.

Risk Characterization. Involves combining results of the dose response and exposure assessments to determine potential health risk.

Uncertainty Assessment. Provides a qualitative discussion of the factors that affect the risk estimates and how uncertainty in those factors could affect the veracity of risk estimates.

The protocol recommends three exposure scenarios for persons living in the vicinity of a source: 1) typical residential exposure; 2) farm products consumption exposure (beef, pork, chickens, eggs, milk; although sheep are not included, their uptake factors would be encompassed by these animals recommended by EPA for these analyses); and 3) fish consumption exposure. These scenarios consider the potential exposure of adults and children through direct and indirect exposure pathways. The exposure pathways include inhalation of compounds emitted from stacks and dispersed into ambient air (a direct pathway) and ingestion of trace compounds that enter the food chain through plant uptake and animal ingestion (an indirect pathway).

Compounds such as mercury enter the food chain through deposition from air to soil, deposition on crops and forage, and deposition into watersheds and their associated waterbodies. The HHRA used conservative default exposure assumptions recommended by EPA unless appropriate site-specific exposure parameters were available. For example, the HHRA applied ingestion rates of locally-caught fish based on local advisories for fish consumption instead of default values. Also, a supplemental analysis was conducted to evaluate the maximum incremental contribution of FCPP emissions to blood-borne lead levels in children using the EPA’s Integrated Exposure Uptake Biokinetic Model.

The HHRA used conservative methodology to analyze risks posed by the mercury and other COPCs as prescribed in the protocol supplemented with site-specific information about receptors, land use, water bodies, and recommended maximum rates of fish

ingestion. Calculated results were evaluated against EPA not-to-exceed risk thresholds ranging from 10^{-4} (1 in 10,000) to 10^{-6} (1 in 1,000,000) for lifetime (70-year) cancer risk and 1 (unity) for noncancer Hazard Index... [EPA 2005]. Because the HHRA lacked site-specific fugitive dust analysis, an additional analysis was conducted that specifically focused on assessing health effects associated with PM₁₀, PM_{2.5}, diesel particulate matter, and exposure to coal constituents in coal dusts at PM_{2.5} levels. The fugitive dust emission risk assessment focused on coal dust constituents based on data from the mine. The Navajo Mine has an on-going fugitive dust monitoring program, which includes triggers for taking further action.

The results of the multipathway HHRA predicted that for 25 years of future operation of FCPP, none of the estimated cancer risks exceed the strictest risk threshold of 1 in a million. For noncancer effects, the HHRA reported all Hazard Indices were below the threshold Hazard Index of 1 and the estimated blood lead concentrations were well below the CDC target blood lead concentration of 5 µg/dl. Therefore, the HHRA concludes that operation of FCPP over the next 25 years would not have a major impact on human health in the vicinity of FCPP. The HHRA also states that given the degree of conservatism purposefully built into the risk assessment methods and thresholds, this conclusion is highly protective of public health (AECOM 2013d).

Based on this detailed analysis, indirect impacts to public health and safety from emissions from the FCPP are considered minor.

Other considerations of potential indirect impacts of FCPP operations include potential effects of coal combustion residue storage at the power plant and safety related to impoundments surrounding the ash disposal areas. These potential effects were addressed in EA through incorporation by reference of the relevant analyses provided in the FCPP/NMEP EIS.

Comment 50

Shiloh Hernandez, Staff Attorney

Additionally, the EA does not address the environmental impacts of long-range air pollutants emitted when FCPP burns the coal mined from Area IV North. *See* Charles J. Cichetti, *Expensive Neighbors: The Hidden Costs of Harmful Pollution to Downwind Employers and Businesses* 38 (Dec. 2010) (“Power plants without pollution controls can no longer be permitted to use the air stream as a free waste transfer system that pollutes the air for downwind populations, not only causing many thousands of premature deaths and illnesses each year, but also causing higher labor and health insurance costs, lost jobs, lost state and local tax revenues and higher gasoline prices in downwind regions.”).

Response

The EA relied on the most current long-range air pollutant models available. The scales were local, regional, and global in extent. These same models were used to consider potential effects to special status species in the Biological Assessment submitted to the USFWS in accordance with Section 7 of the Federal Endangered Species Act, and were incorporated into other resource categories. A few major points of the analysis are summarized in the following.

Air dispersion and deposition modeling was conducted to assess the potential extent of future deposition. Based on a study by EPRI (2011) as well as other studies, arsenic, cadmium, chromium, mercury, antimony, lead, copper and selenium are understood to be the primary risk drivers for adverse ecological effects associated with coal-fired power plants. Therefore, dispersion and deposition modeling of these eight metals was completed to delineate the terrestrial area to be evaluated in the Deposition Area ERA. The CALPUFF1 model was applied within a 300-km radius of the FCPP to simulate dispersion and deposition of the metals to estimate the contribution of future continuous full load operations of the FCPP stacks² for 25 years to surface soil concentrations in the region.

Because the Deposition Area extended less than 50 km from the FCPP, further detailed air dispersion and deposition modeling needed to support the Deposition Area ERA was performed using AERMOD (version 12345)³ to quantify future emissions from the FCPP stacks that would be added to the existing concentrations in the soils within the Deposition Area over 25 years. This was done in order to assess the terrestrial exposure to COPECs from FCPP stack emissions. The AERMOD modeling was extended to a 50-km radius of the FCPP.

To assess the contributions of arsenic and selenium from regional power plants (FCPP, San Juan Generating Station, Navajo Generating Station) and the local, regional, and global contributions of mercury to water, watershed compartments, and biota in the San Juan River basin extending down to the San Juan arm of Lake Powell, EPRI developed a regional air quality model and coupled the output with a watershed biogeochemical cycling and aquatic biota bioaccumulation model. Figure 2-1 displays the San Juan River watershed that was used for this model.

The EPRI CMAQ-APT model was used for modeling atmospheric transport and deposition of arsenic, mercury, and selenium in the San Juan Basin region. This regional-scale model has as its core the U.S. EPA CMAQ model and applies an advanced plume treatment (APT) module for more precision closest to the sources. The Weather Research and Forecasting meteorological model (WRF) was used to simulate the entire depth and breadth of the regional atmosphere. For mercury, the global GEOS-Chem model, based on the NASA GEOS atmospheric global transport model combined with a Harvard University atmospheric chemistry simulation model, was used to simulate the movement of mercury from distant sources into U.S. airspace.

The CMAQ-APT model was used to produce wet and dry atmospheric deposition inputs to the Watershed Analysis Risk Management Framework (WARMF) model. WARMF is a three-dimensional dynamic model that uses a comprehensive mechanistic based modeling framework, which was applied to the San Juan River watershed and used to

¹ CALPUFF is the EPA-approved model to simulate dispersion and deposition over a large area for long-range transport and complex terrain on scales of tens to hundreds of kilometers.

² For the purposes of evaluating future operations, this refers to units 4 and 5 with SCR installed.

³ AERMOD is the EPA-approved steady-state plume model that incorporates air dispersion for simple and complex terrains. It is designed for short-range modeling up to 50 km.

simulate the watershed transport, transformation and bioaccumulation processes to calculate concentrations of arsenic, selenium, and mercury in the water and mercury in the fish. WARMF calculates concentrations and movement of particular substances through the terrestrial and aquatic components of the San Juan Basin. WARMF quantifies the relationship between atmospheric deposition plus direct input from watershed sources of chemicals, and resulting concentrations in surface water (concentrations in invertebrate and fish tissue were also estimated for mercury).

CMAQ-APT was used to generate atmospheric deposition for several potential scenarios of emissions from local coal fired power plants as well as atmospheric sources of mercury external to the San Juan Basin. The four air dispersion and deposition modeling simulations performed were:

1. base case “current” emissions, with all five FCPP units operating, current San Juan Generating Station (SJGS) and Navajo Generating Station (NGS) emissions, and current world mercury emissions;
2. post-EPA Mercury and Air Toxics Standard (MATS) rule emissions for FCPP (2014 for post-MATS, also assuming Units 1-3 were retired¹), SJGS (2016 for post-MATS) and NGS (2016 for post-MATS);
3. a lower estimate of future Chinese emissions; and
4. a higher estimate of future Chinese emissions.

In each of the China cases, FCPP, NGS and SJGS were modeled post-MATS, and current world emissions were also included in the modeling.

Comment 51

Shiloh Hernandez, Staff Attorney

The EA fails to disclose radiation impacts from burning coal (the coal includes interbedded uranium) at FCPP derived from Navajo Mine. Radiation is associated with air emissions and in the vast amounts of coal combustion waste (CCW) now stored at FCPP on the banks of the Chaco River. BHP and NTEC are responsible for the CCW and the radiation impacts to humans where CCW could leach into the Chaco River to the San Juan River to the Colorado River. OSMRE’s failure to mention radiation and associated uranium in coal at Navajo Mine is egregious.

Response

The Cumulative Hydrologic Impact Analysis addressed uranium and radium in coal and CCBs, and found that levels were either below the quantification limits of the analysis, or were below the relevant NNEPA standards. The CHIA is in the record for the EIR/EIS and the EA, and does not indicate further need for analysis. The issue was not raised in scoping for the FCPP/NMEP EIS and the EA, or in the associated SMCRA public comment opportunities.

¹ There was no information on the incremental benefit of new SCR for Units 4-5, thus no additional reductions were applied for that element.

Comment 52

Shiloh Hernandez, Staff Attorney

Cottonwood Wash in Area IV North requires and Individual Permit under the Clean Water Act through the U.S. Army Corps of Engineers (USCOE). This permit is part of the Proposed Action in the revised EA, although an Individual Permit requires an EIS, public meetings and a Federal Register notice. The Individual Permit for the 404 permit is not sufficiently covered in OSMREs revised EA for Navajo Mine. USCOE cannot proceed without an EIS and OSMRE must revise the revised Navajo Mine EA to disclose to the public this malfeasance.

Response

All current mining activities are eligible to be conducted under the authority of the Army Corps of Engineer (USACE) Nationwide Permit (NWP) program, which includes NEPA compliance. However, because the applicable NWPs require re-verification every 2 years and require reauthorization (with potential changes) every 5 years, BNCC made an operational decision to pursue a consolidated IP to authorize fill in waters of the U.S. associated with mining activities within Navajo Mine Areas III and IV North in support of pre-July 6, 2016 mining.

Therefore, the scale of the work in Cottonwood Wash would not trigger an EIS. For issuance of an IP, the USACE requires that a project avoid, minimize, and compensate for impacts to waters of the U.S. In order for the USACE to issue an IP, NEPA analysis and public interest evaluation are required. The USACE was a cooperating agency and utilized the 2012 EA for its permit approval, along with its Section 404(b)(1) Alternatives Analysis public interest evaluation, to assess alternatives and impacts of the Proposed Action. The USACE approved the action, and the authorized fill has been completed as of the date of this EA.

Comment 53

Shiloh Hernandez, Staff Attorney

The EA's assessment of socio-economic impacts is also incomplete. While the EA sings the praises of the massive strip mine and hugely polluting power plant, it fails entirely to discuss the well known and documented harms (the "curse of natural resources") that result from such heavy reliance on development of natural resources.¹ Heavy natural resource development is known to crowd out other industries, such as manufacturing and tourism; on the other hand, protected natural amenities are driving modern high tech job growth.² Currently, the Navajo Nation is trying to develop additional economic drivers for a diversified economy that is less dependent on coal. EA at 391. The EA must assess the degree to which the existence of the heavily polluting strip mines and power plants, like the Navajo Mine-FCPP complex, impairs the Navajo Nation's ability to develop a diverse economic base.

¹ Sachs & Warner, The Curse of Natural Resources 45 *European Economic Rev.* 827 (2001) (attached as Exhibit 3); Sachs & Warner, *Natural Resource Abundance and Economic Growth*, Working Paper 5398, National Bureau of Economic Growth (1995) (attached as Exhibit 4).

² Jeff Goodell, *Big Coal* at 32-33 (2006); Headwaters Economics, *Montana's Economy and the Role of Federal Protected Lands* (2011) (attached as Exhibit 5)

Response

Based on interaction during the preparation of the FCPP/NMEP EIS, the Navajo Nation has demonstrated support for the project, primarily on socioeconomic grounds, to the extent of purchasing the mine to creating the Navajo Transitional Energy Company. Although the basis for concern over a “resource curse” on Navajo Lands has not been specified in the comment, or raised earlier (no crowding out of other industries as a result of inflated prices from resource subsidies), still the Navajo are taking concrete steps to use the revenue from this resource base to fund their future.

On April 29, 2013, the Navajo Nation Council enacted legislation to form the NTEC. This legislation was signed into law by President Ben Shelly on April 30, 2013. As stated in the resolution, NTEC sought to purchase the Navajo Mine and control the lease, mineral rights, and operations of Navajo Mine in order to:

“promote and develop the Navajo Nation’s resources and new sources of energy, power, transmission, and attendant resources to develop the economic, financial, social and cultural well-being of the Navajo People and the Navajo Nation; and to promote the economic vitality of the Navajo Nation through the production of goods and services, to facilitate management of the Navajo Nation’s interest in the development of its energy portfolio and market, to steer the Navajo Nation into a more efficient, productive, vital, and sustainable energy portfolio and market in the best interests of the future generations of the Navajo Nation” (Navajo Nation Council Resolution CAP-20-13 as amended May 23, 2013).

Further, the legislation authorizing the formation of NTEC states that “[t]he Navajo Nation’s approval of the creation, formation, organization establishment and operation is for the protection and promotion of the Navajo People’s and the Navajo Nation’s economic and financial best interests, which are tied and related to mining operations and the energy industry within the Navajo Nation, as a means to ameliorate the economic financial and social conditions of the Navajo People and the Navajo Nation.”

The CEQ guidance on environmental justice (CEQ 1997) states:

“Under NEPA, the identification of a disproportionately high and adverse human health or environmental effect on a low-income population, minority population, or Indian tribe does not preclude a proposed agency action from going forward, nor does it necessarily compel a conclusion that a proposed action is environmentally unsatisfactory. Rather, the identification of such an effect should heighten agency attention to alternatives (including alternative sites), mitigation strategies, monitoring needs, and preferences expressed by the affected community or population.”

The action of the Tribal Council is an expression by the affected community that investment in the Navajo Mine by the Navajo Nation would meet its goals of controlling the mineral resource and providing stable employment for members. The Navajo Nation has the authority to discontinue operations at the Navajo Mine, as well as the FCPP; however, the Navajo Nation decided to approve Lease Amendment #3 for the FCPP. The

Navajo Nation also voted to create NTEC for purposes of purchasing the Navajo Mine; these actions were by super-majority votes of the Tribal Council. The Navajo Nation government representatives are elected by tribal members in a democratic process; thereby, decisions of the Navajo Nation government are considered representative of the tribe (the environmental justice community of concern for this project).

In addition, mining does not appear to be “crowding out” other industries. In establishing NTEC, the Navajo Nation is considering other energy related industries, as well as revenue diversification strategies, such as casino gaming.

Comment 54

Shiloh Hernandez, Staff Attorney

Finally, the EA fails entirely to assess the proposed mine expansion’s impacts on traditional Navajo cemeteries. The Surface Mining Control and Reclamation Act prohibits coal mining within 100 feet of any cemetery. 30 C.F.R. § 761.11(g). Cemetery is defined broadly to include any area of land where human bodies are interred. *Id.* § 761.5. The EA admits that there are 10 human burials in Area IV North and additional one historic Navajo burial in Area III. EA at 257, 259. As such, there are cemeteries in within Area IV North and mining may not occur within 100 feet of these cemeteries. The EA makes no effort to delineate the bounds of these cemeteries (a cemetery is larger than simply the location of individual interred bodies) and gives no indication that OSM is going to prohibit NTEC from mining near each of these burials. The existence of these cemeteries constitute yet another NEPA significance factors, warranting preparation of an EIS. 40 C.F.R. § 1508.27(b)(3). OSM’s failure to recognize the protected status of these cemeteries seems to indicate that OSM does not intend to extend SMCRA’s protections to them. Please clarify in OSM’s further review of this project that these cemeteries are entitled and will be afforded the protections of SMCRA.

Response

The EA thoroughly analyzes the potential impacts to burial sites and associated cultural resources, and the associated requirements of SMCRA’s implementing regulations. Please see page 257 where the EA states that “In accordance with the Navajo Nation Jishchaa’ Policy and NAGPRA, the closest lineal descendants were interviewed and it was their desire to leave the graves where they are located. A fence has been built around the location of the burials and the proposed mining activities will avoid the location.” Prior to any approval of a significant revision, OSMRE will ensure that any mining plans meet the requirements of 30 CFR 761.11(g): [Areas where surface coal mining operations are prohibited or limited] “Within 100 feet, measured horizontally, of a cemetery. This prohibition does not apply if the cemetery is relocated in accordance with all applicable laws and regulations.” Additionally, OSMRE actively enforces the terms of its permits through inspections of permitted mining areas. With regard to your parenthesized suggestion that “a cemetery is larger than simply the location of individual interred bodies,” OSMRE, in the decision for this proposed action, does not have the discretionary authority to modify the definition of cemetery that has already been defined through the development process of the 30 CFR Part 700 to End regulations. There is no statutory or regulatory requirement or suggestion to delineate bounds to a cemetery. The term used in the EA, “burial,” is defined under NAGPRA, Section 2: “'burial site' means any natural or prepared

physical location, whether originally below, on, or above the surface of the earth, into which as a part of the death rite or ceremony of a culture, individual human remains are deposited.” As you suggest, a burial is a cemetery and the requirements of SMCRA shall be enforced. OSMRE recognized the areas where surface coal mining operations are prohibited or limited in its 2012 Findings Determination for Approval of a Significant Permit Revision Application and found that operations proposed in the revision application were not within 100 feet, measured horizontally, of a cemetery. OSMRE must reach that determination in any subsequent finding or reach a finding that applicable cemeteries are relocated in accordance with applicable laws and regulations.

In order to provide for encompassing consideration and protection for all cultural resources, including burials, and to provide for future cultural resource compliance activities, an updated Programmatic Agreement (PA) has been developed. Consistent with the requirement of 30 CFR 761.11(g), the PA includes Stipulation 8: Treatment for American Indian Remains and Cultural Objects, which states “The treatment of American Indian remains... shall be addressed in accordance with the Navajo Nation Policy for the Protection of Jishchaa’: Gravesites, Human Remains, and Funerary Items (Jishchaa’ Policy), and in a manner that is consistent with the NAGRPRRA and its implementing regulations (43 CFR 10).” Under the previously issued NM-0003F permit, Special Permit Condition 3 required implementation of the PA. A requirement to implement and apply the updated PA for Area III, Area IV, and the Burnham Road could be considered as a special condition for the current permit revision application evaluation. Specifically, the actions considered in the 2012 EA required an update to the PA developed through consultation under Section 106 of the National Historic Preservation Act (NHPA). The existing PA was updated and implemented during the work authorized in 2012. The FCPP/NMEP EIS included Section 106 consultation, which led to the development of an amended PA for the Navajo Mine to address new mining activity, and a new PA for the operation of FCPP and associated transmission lines. No ground disturbing activity at FCPP or associated transmission lines are associated with this EA, and therefore no new Section 106 consultation is required. All future operations to 2041 of both Navajo Mine and FCPP are addressed through the recently-approved PAs.

Comment 55

Shiloh Hernandez, Staff Attorney

Numerous threatened and endangered species are known to occur within the federally defined “action area” of the Navajo Mine and the proposed expansion area, all of which “may” be affected directly, indirectly, and/or cumulatively by the proposed action and its resulting coal mining and transportation, as well as by subsequent combustion at Four Corners Power Plant. Listed species and critical habitats that may be affected include: the endangered Colorado pikeminnow (*Ptychocheilus lucius*) and its designated critical habitat; the endangered razorback sucker (*Xyrauchen texanus*) and its designated critical habitat; the endangered roundtail chub (*Gila robusta*); the endangered southwestern willow flycatcher (*Empidonax traillii extimus*) and its designated critical habitat; the endangered yellow-billed cuckoo (*Coccyzus americanus*); the threatened Mesa Verde cactus (*Sclerocactus mesae-verdae*); the endangered Mancos milkvetch (*Astragalus humillimus*); the endangered Rio Grande silvery minnow (*Hybognathus amarus*) and its designated critical habitat; and, the endangered California condor (*Gymnogyps californianus*)

(collectively referred to herein as “Listed Species and Critical Habitats”). See U.S. Dep’t of the Interior, U.S. Fish and Wildlife Service, *Draft Biological Opinion for the Desert Rock Energy Project, U.S. Bureau of Indian Affairs, Gallup, New Mexico* (Oct. 2009) (Desert Rock BiOp) see also 50 CFR § 402.02 (defining “indirect effects” as “those that are caused by the proposed action and are later in time, but still are reasonably certain to occur.”).

The Navajo Mine EA cites to the Biological Opinion for the FCPP/NMEP Project (2015 BiOp) and also claims consultation with United States Fish and Wildlife Service in 2011. Neither of these processes is appropriate for the Navajo Mine Area IV expansion given the recognition that the impacts of the Proposed Action will now extend to 2019-2020. Further, the 2015 BiOp is arbitrary and capricious and consequently any reliance on the 2015 BiOp is misplaced.

Response

The EA and the BA for this proposed action describe the consultation history, including the 2011 BE and 2012 Letter of Concurrence from the FWS on mining-related effects of Area IV North; the 2015 BiOp for the FCPP/NMEP, and the 2015 BA and letter of concurrence from the FWS on combustion-related effects of Area IV North. The comment does not provide a basis for why the 2015 BiOp was arbitrary and capricious, or why reliance on a final BiOp is misplaced. A few major points of the consultation history are provided in the following.

During OSMRE’s reconsideration of the effects of coal combustion associated with issuance of the Area IV North SMCRA permit revision, OSMRE also reconsidered the potential impacts of issuing the permit on Federally listed species, and in light of OSMRE’s Biological Assessment (BA) and U.S. Fish and Wildlife Services’ (USFWS’) recently finalized Biological Opinion (BO) for the FCPP and NMEP. These documents were prepared based upon the best scientific and commercial information available, pursuant to statutory requirements, and include relevant data, including mercury emissions from FCPP as follows: OSMRE’s cumulative effects analysis in the BA included past effects from mining and coal combustion, i.e., 2002 to 2011, current impacts from mining and coal combustion, 2014 to 2016, and future impacts from mining and coal combustion, i.e., 2016-2041 This takes into account emissions from operation of all five units at FCPP during the time they were operating because Units 1, 2, and 3 were not shut down until December 2013. Annual emissions from 2012 through 2014 when all 5 units were operational are considered to be equivalent to past annual emission (2002-2011) and directly analyzed in this EA. Thus, the documents reflect the actual emissions in 2012, i.e., at the time OSMRE would have been considering NTEC’s Area IV North revision application, and predicts future emissions.

These documents evaluated the ongoing mining and burning of coal from the Project and future operations for the next 25 years and the potential impacts of the Project on Federally listed species. These analyses considered the effects of past, present, and foreseeable future actions on listed species, and evaluated impacts based on the total impact associated with all of those actions. The past actions considered in the BO included the issuance of the Area IV North permit revision. Area IV North and all associated impacts, including

atmospheric deposition from the burning of this coal at FCPP, lies entirely within the Action Area considered in the FCPP and NMEP. The potential effects associated with mining in Area IV North, including ground disturbance, effects on wetlands and water quality, water diversions, and atmospheric emissions and deposition, including mercury deposition, from FCPP are all fully evaluated in the BO. The BO concluded that the Project will not jeopardize the continued existence of the Colorado pikeminnow, razorback sucker, southwestern willow flycatcher, or yellow-billed cuckoo, nor will it adversely modify or destroy their designated critical habitats in the San Juan River Basin. The BO also concurred in OSMRE's determination that the Project was not likely to adversely affect the other relevant listed species. Although the effects of Area IV North were analyzed in both the BA and the BO for the FCPP/NMEP issued by USFWS, take was authorized commencing January 1, 2016. Therefore, OSMRE has determined that additional analysis was necessary to address potential take associated with NTEC's Area IV North Mine Plan Revision and has conducted analysis for the time period from September 1, 2015 to July 6, 2016. OSMRE prepared a new BA for the Proposed Action considered in this EA during this time frame. This new BA is based on the thorough analysis conducted for the FCPP and NMEP. The Action Area, for purposes of the BA, encompasses all areas within the Deposition Area for air emissions associated with the FCPP.

The analysis in the BA evaluates the effects on species listed as threatened or endangered under the federal Endangered Species Act (ESA) that are likely to occur within the Action Area from combusting Area IV North coal at FCPP. The BA also provides conservation measures that would be implemented during this period. As a conservation measure for the Area IV North Mine Plan Revision, NTEC has proposed entering into a binding agreement with APS to shut down the cooling water intake pumps located at the APS San Juan River Pumping Station during the October and November 2015 stocking period for endangered San Juan River fish species to prevent impingement and entrainment of stocked fish during such period and prohibiting commencement of mining in Area IV North until September 1, 2015, after spawning has occurred for 2015. Given the limited term of the Proposed Action, the fact that beginning in January 2016, legally binding conservation measures and reasonable and prudent measures will ameliorate the conditions for the listed species (as a result of the FCPP/NMEP BO), and the incorporation of the above-stated conservation measures in the Proposed Action, OSMRE is of the opinion that the Proposed Action will not affect the continued existence of endangered or threatened species or result in destruction or adverse modification of their critical habitats, as determined under the ESA of 1973 (16 USC 1531 et seq.). On the basis of the analytical results in the BA, OSMRE concluded that the proposed action may affect, but is not likely to adversely affect, listed species between September 1, 2015 and January 1, 2016. OSMRE submitted the BA to the USFWS and the USFWS issued a letter of concurrence for these findings on October 19, 2015. The analysis includes species listed as threatened or endangered by the Navajo Nation.

The potential effects on listed species that could result from the mining of Area IV North coal under the Proposed Action were addressed in a prior Section 7 Consultation, and the USFWS concurred with OSMRE's effects analysis in a letter dated January 19, 2012.

OSMRE's determination and the USFWS concurrence remain valid and thus those effects are not readdressed in the new BA.

Comment 56

Shiloh Hernandez, Staff Attorney

The Revised EA fails to take a hard look at mercury pollution from the disposal of coal combustion waste (CCW) at the Navajo Mine, as well as the combustion of coal from the Navajo Mine at FCPP—both of which will indirectly and cumulatively impact endangered Colorado pikeminnow, the razorback sucker and their critical habitat. Both fish would be exposed to mercury emissions through surface and groundwater contamination and ambient air exposure, deposition, and runoff into aquatic habitats, and subsequent bioaccumulation through the food chain.

Response

The comment appears to pertain to the Desert Rock project, not to the Area IV North project. Contrary to the comment, the Desert Rock never had a BiOp. A draft deliberative document that was not the final opinion of the US FWS was released. The deliberations and considerations provided in the Desert Rock proceedings do not meet the criteria for a final decision document that can be relied upon for incorporation by reference. Furthermore, the context of Desert Rock was very different: that was for the proposed addition of a new power plant and an increase in mercury and other air emissions, beyond the emissions of the existing plants in the region, including the FCPP.

Comment 49 addresses analysis of effects of mercury to special status species, and other resources including water resources and soils. FCPP/NMEP was a final BiOp and extensively addressed mercury, as did the BA and letter of concurrence from the FWS for this project.

Area IV N BA included additional conservation measures to reduce the effects to not likely to adversely effect. After January 2016, the FCPP/NMEP BiOp addresses combustion related effects due to mercury deposition, as well as all other effects of the FCPP/NMEP on special status species.

The analysis included water quality analysis and modelling related to CCBs placed in the mine, and CCRs placed at FCPP, and found that there were not significant effects from such storage.

Comment 57

Shiloh Hernandez, Staff Attorney

Moreover, OSM has failed to consider the impacts that climate change will have on listed species. According to experts at the GAO, federal land and water resources are vulnerable to a wide range of effects from climate change, some of which are already occurring. These effects include, among others, “(1) physical effects, such as droughts, floods, glacial melting, and sea level rise; (2) biological effects, such as increases in insect and disease infestations, shifts in species distribution, and changes in the timing of natural events; and (3) economic and social effects, such as adverse impacts on tourism, infrastructure, fishing, and

other resource uses.”¹ There is a growing consensus within the scientific community that climate change will “compound existing threats to declining species and lead to an acceleration of the rate at which biodiversity is lost. The species that are most vulnerable to extinction from whatever cause are those with restricted ranges, fragmented distribution within their range, low populations, reducing range, decreasing habitat within the range, and/or which are suffering population declines. Species with quite restrictive habitat requirements are most vulnerable to extinction. Where climate change is projected to reduce habitats of such species there are likely to be the greatest extinction risks.”² Not surprisingly, “[a]quatic and wetland ecosystems display high vulnerability to climate change. Changes in water temperature and shifts in timing of runoff will change aquatic habitats, resulting in species loss or migration as well as novel and unpredictable interactions of new combinations of species.”³

Impacts from climate change are anticipated to acutely affect New Mexico, and include the “dewatering of rivers and streams,” as well as “[i]ncreased drying of soils and significant reductions in soil moisture”—all of which are “likely with climate change as potential evapotranspiration rises with increasing temperatures.”⁴ These effects will “compound the adverse effects of changes in the hydrology of runoff and water availability throughout New Mexico.”⁵ Water availability has the potential to significantly impact endangered and threatened species. For example, “[s]ubstantial changes in the natural hydrograph and intensification of managed uses will severely disrupt stream ecology and health, which may have additional implications for managing endangered [fish species],”⁶ as well as those species—like the Southwestern willow flycatcher—which “rely on riparian vegetation for nesting and food resources.”⁷ None of these impacts to listed species from climate change were considered in OSM’s BE, a fatal error.

Response

As discussed in the response to WELC comment 45, both the EA and the BA addresses climate change effects to biological resources extensively. The contribution to GHG emissions from mining operations is negligible compared to the emissions from FCPP. Therefore this has received a hard look.

¹ GAO Report, *Climate Change: Agencies Should Develop Guidance for Addressing the Effects on Federal Land and Water Resources* (2007); see also Committee on Environment and Natural Resources, National Science and Technology Council, *Scientific Assessment of the Effects of Global Climate Change on the United States* (2008); Melanie Lenart, et al., *Global Warming in the Southwest: Projections, Observations and Impacts* (2007) (describing impacts from temperature rise, drought, floods and impacts to water supply on the Southwest).

² Agency Technical Work Group, State of New Mexico, *Potential Effects of Climate Change on New Mexico* (2005), at 24-25.

³ John R. D’Antonio, *The Impact of Climate Change on New Mexico’s Water Supply and Ability to Manage Water Resources* (2006), at 45.

⁴ Brian H. Hurd, et al., *Climate Change and Its Implications for New Mexico’s Water Resources and Economic Opportunities* (2007), at 18.

⁵ *Id.*

⁶ Hurd, et al. at 19.

⁷ See Agency Technical Work Group, State of New Mexico, at 25, 26.

Comment 58

Shiloh Hernandez, Staff Attorney

Furthermore, OSM failed to consult with FWS in 2011—in violation of the ESA and its implementing regulations.¹ In correspondence with OSM, SJCA specifically requested a copy of initial consultations with FWS on compliance of the proposed project with the Endangered Species Act, to which OSM’s response was that “OSM has nothing to provide.”² Indeed, the BE states that there was no consultation with FWS because OSM had “consulted in the past.” Appendix E at 1. Unfortunately for OSM, past outdated consultations do not satisfy the ESA’s implementing regulations. As noted above, the only listed species contemplated in the EA was the Southwestern willow flycatcher—which OSM concluded may be affected but is unlikely to adversely affected by the proposed project. EA at 181. However, once a “may affect” determination is made, the Federal agency must either request FWS concurrence with a “may affect, but not likely to adversely affect” finding, or request initiation of formal consultation. 50 C.F.R. § 402.14(a).³ In other words, a determination of “not likely to adversely affect” (a conclusion reached at the end of a BA) requires the consent of the FWS. Here, that consent was neither sought nor granted.

Aside from the evident concerns that OSM’s dismissive approach to ESA compliance raises for the many listed species at risk from the proposed action, there are also concerns with regard to the public’s opportunity to evaluate this action. In *Wildlands v. U.S. Forest Service*, 791 F.Supp.2d 979, 991 (D. Or. 2011), the court concluded that “the public evaluation process of the proposed agency action and its impact on the environment was skewed by the inaccurate and misleading ‘not likely to adversely impact’ [listed species] determination in the EA.” The court continued, “[T]he public is entitled to be accurately informed of the impact of the proposed action . . . and to have a meaningful opportunity to weigh in on the proposal during the period for public review and comment.” *Id.* OSM’s approach has foreclosed the public this opportunity through its cursory and insulated analysis.

Thus, the direct, indirect and cumulative impacts to threatened and endangered species and their critical habitats must be analyzed as a result of the proposed Navajo Mine Area IV North Mine Plan Revision, per compliance requirements with Section 7 of the ESA, 16 USC § 1536, and its implementing regulations at 50 CFR § 402. Those impacts include but are not limited to the impacts of mercury and selenium pollution resulting from coal mining, combustion, waste disposal and climate change on all the listed species and critical habitat in question. In addition, the Navajo Nation Fish and Wildlife Department must be consulted on any potential action concerning the Navajo Nation and potential impacts to species listed under the Navajo Endangered Species List (NESL).⁴

¹ According to the ESA Section 7 Handbook, at 4-12, “[t]he history of the consultation request includes any informal consultation, prior formal consultations on the action, documentation of the date consultation was initiated, a chronology of subsequent requests for additional data, extensions, and other applicable past or current actions. Conclusions reached in earlier informal and formal consultations on the proposed action also may be relevant. If so, such conclusions should be documented in the biological opinion.”

² Email from Bob Postle, Manager, Program Support Division, Western Region, OSM to Mike Eisenfeld, New Mexico Energy Coordinator, SJCA April 12, 2011.

³ See also U.S. Fish and Wildlife Service, *Section 7 Consultation, Guidance for Preparing a Biological Assessment* (2011), available at: http://www.fws.gov/midwest/endangered/section7/ba_guide.html (last visited Jan. 5, 2012).

⁴ The Navajo Mine EA predicts impacts from habitat loss and modification, as well as disturbance from mine related noise and human presence to the following Navajo Nation listed species: kit fox, golden eagle, ferruginous hawk, western burrowing owl, and San Juan milkweed. See EA, at 181-82.

Response

The consultation history is addressed in response to WELC comment 55. Consideration of effects to endangered species are addressed in response to WELC comment 45 (climate change), WELC comment 49 (mercury), and WELC comment 50 (long-range modelling).

The EA summarizes the findings of the BA, and describes the entire consultation process. Although public involvement is not required for the Section 7 process, disclosing this information in the EA ensured that the public and stakeholders had an opportunity to comment on it during the review period.

In regards to the comment's citing SJCA's April 12, 2011 correspondence with OSMRE in which OSMRE responded saying it had nothing to provide; note that correspondence with USFWS and Navajo Nation specifically regarding ESA Section 7 consultation did not occur until **after** OSMRE's April 12, 2011 email to SJCA. At the time the question was asked, there was nothing to provide. Afterwards, the consultation commenced. Since that time, the commentor has been made aware of and has received copies of previous consultation correspondence and records through FOIA and documents provided through their actions in U.S. District Court.

Comment 59

Shiloh Hernandez, Staff Attorney

In any event, the adverse impacts of the project on Colorado pikeminnow and Razorback sucker are sufficient to require preparation of an EIS. 40 C.F.R. § 1508.27(b)(9). As an initial matter, the BA itself says that that the operations of the APS Weir (the continued operations of which are reasonably foreseeable if mining activities are continued in Area IV North) will likely adversely affect Colorado pikeminnow and Razorback sucker by impeding migration. EA at 376. Further, despite mitigation efforts, it is clear that continued operations of the Navajo Mine and FCPP will continue to adversely affect Colorado pikeminnow and Razorback sucker. As the 2015 BiOp, on which the EA relies, notes:

Past and present activities within the San Juan River basin have degrade these habitat elements [primary constituent elements] to the extent that their concurrence at the appropriate places and times is insufficient to support successful Colorado pikeminnow and razorback sucker recruitment at levels that will provide for the species' conservation. While implementation of the proposed action is expected to exacerbate the very limited co-occurrence of PCEs at appropriate places and times, the implementation of the Conservation Measures will offset that impact. The increased Hg deposition in the basin, the contamination of the physical properties of the water, and the prey of Colorado pikeminnow could lead to an irreversible loss of reproductive success and adult survival necessary to sustain the species beyond the proposed action. As previously noted, **these effects are attributable** to the degraded environmental baseline, **the proposed action** and future predicted increased global contributions of Hg to the basin.¹

Because the proposed action is clearly going to contribute to adverse impacts to endangered species (in addition to other reasons), it must prepare an EIS.

¹ 2015 BiOp at 136.

Response

The BA for the combustion related effects addressed this topic at length; briefly, there will be no effects on the species' critical habitat during the Proposed Action's term because mercury and selenium deposition from combustion of Area IV North coal will not be deposited in sufficient amounts in critical habitat during this time period to have any effect. Any effects to critical habitat beginning in January 2016 and all future effects are offset, mitigated, or avoided by the CMs and RPMs enforceable through the FCPP-NMEP BA and USFWS BO.

An EA prepared in support of an individual proposed action can be tiered to a programmatic or other broader-scope environmental impact statement such as the FCPP/NMEP EIS, as is this EA. A finding of no significant impact other than those already disclosed and analyzed in the EIS to which the EA is tiered may be called a "finding of no new significant impact" (43 CFR 46.140 (c)). Therefore, an EIS is not required and OSMRE has made a finding of no new significant impact.

Comment 60

Shiloh Hernandez, Staff Attorney

Despite the departure of BHP Billiton by 2016 as owner/manager at Navajo Mine, the Revised EA for the proposed Navajo Mine Area IV North Mine Plan ignores bonding at Navajo Mine, now the responsibility of NTEC/Navajo Nation. OSMRE has failed to disclose due diligence reports discussing future economic impacts that will be incurred for reclamation and all liabilities associated with Navajo Mine. This is important because BHP currently has insufficient bonds to reclaim Navajo Mine, while passing on responsibilities via waivers for liability to Navajo Nation. Following BHP and Utah International mining for over 50 years at Navajo Mine, will OSMRE allow BHP to simply walk away leaving NTEC/Navajo Nation to grapple with the enormous financial costs of reclaiming Navajo Mine? BHP has recently been responsible for the Samarco iron-ore dam breach in Brazil, exposing huge financial liabilities with the released pollution and significant adverse impacts to humans. OSMRE has failed to disclose bonding/liabilities/waivers at Navajo Mine in this revised EA that could adversely impact Navajo Nation taking over the Navajo Mine on their own in 2016. In addition, OSMRE has an obligation to insure that the public does not end up having to pay for BHP's liabilities at Navajo Mine. Sadly, this follows the sordid old storybook in the Four Corners Region (see Animas River Spill in August of 2015) where industries are allowed to mine and are then nowhere to be found (or bankrupt) when the true costs and impacts come to bear. In fact, the San Juan River is an imperiled river, threatened by Navajo Mine impacts including mercury and a legacy of pollution. Despite BHP publicly stating that they are responsible for insuring the future of Navajo Mine and FCPP, the real story is that they are evading the enormous financial cost of cleanup at Navajo Mine as they exit. The revised EA is the appropriate level of analysis for OSMRE to confront this BHP departure issue.

In conclusion, the Proposed Action in this EA is no longer associated with a deadline of 2016 for exhausting Navajo Mine coal resources in Area IV North—this now extends to 2019-2020. OSMRE must disclose all bonding/liabilities/due diligence associated with Navajo Mine Area IV North, as well to the entire Navajo Mine complex.

Response

The Surface Mining Control and Reclamation Act (SMCRA) permit for the Navajo Mine, NM-0003F, was transferred from BHP's Navajo Coal Company (BNCC) to the Navajo Transitional Energy Company (NTEC) on February 4, 2014. With its Approval and Issuance of the Navajo Mine Permit, NM-0003F, to NTEC, OSMRE found NTEC had met all the requirements required of a permit transfer, assignment or sale. This transfer was complete prior to the start of the analysis for this EA.

In its permit transfer decision, OSMRE's federal action is to determine the eligibility of the applicant to be transferred the mine permit as defined by 30 CFR 774.17. Confidential and proprietary financial information regarding the "purchase transaction" is not required to be submitted to and examined by OSMRE in order to make the decision.

As the SMCRA permit holder, NTEC is subject to all of the requirements of a permit holder and the regulations of SMCRA, including the reclamation liability.

The SMCRA reclamation bond posted by NTEC for the Navajo Mine (including Area IV North) can be found in the permit application package located on OSMRE's website. OSMRE reviewed the reclamation bond applicable to the Area IV North permit revision application as well as the current mine-wide reclamation bond and that amount has been calculated to account for the reclamation required in the disturbances to occur within the Area IV North mining area as well as inflation.

SMCRA requires an operator to post a performance bond payable to the regulatory authority in an amount sufficient "to assure the completion of the reclamation plan if the work had to be performed by the regulatory authority in the event of forfeiture." 30 USC 1259. Liability under the bond must be for the duration of the surface coal mining and reclamation operation. *Id.* The SMCRA reclamation bond amount is based, among other factors, on the cost for full completion of the reclamation plan giving consideration to such factors as topography, hydrology, and revegetation and the probable difficulty of reclamation completion. The SMCRA performance bond calculation is included in the Navajo Mine Permit Application Package, Part 7, Section 50-Bonding.

The Revised EA evaluates the disturbance related to the proposed mining of Area IV North at Navajo Mine. Providing an adequate reclamation bond is a SMCRA requirement and must be provided prior to the issuance of the SMCRA permit. It is an administrative component of the permit process, and does not represent or result in a physical change to the environment that would be analyzed in an EA. The EA analyzes the impacts of mining and the required reclamation requirements under SMCRA. The reclamation bond assures the requirements of SMCRA will be met if the regulatory authority must undertake the work in event of bond forfeiture. The EAs analysis of mining and associated SMCRA reclamation remain valid.

WESTERN ENVIRONMENTAL LAW CENTER ON BEHALF OF SAN JUAN CITIZENS ALLIANCE

Comment 61

Shiloh Hernandez, Staff Attorney

These comments are submitted by Western Environmental Law Center on behalf of San Juan Citizens Alliance (SJCA). It has come to our attention that the addition of sulfates to waters can increase the methylation mercury in the environment.¹ Accordingly, deposition of sulfur from power plant emissions and discharge of sulfur into water ways can lead to increased methylmercury concentrations in the environment. As you know, methylmercury is the form of mercury that is harming endangered fish in the San Juan River. This issue has not been addressed in any ESA or NEPA analysis for the Navajo Mine or Four Corners Power Plant. Please address this in the final EA for the Area IV North expansion.

Response

The article provided in the comment studied a test wetland in Minnesota, under very different conditions than found in the desert southwest. Nonetheless, the interaction between sulfate and methyl mercury was addressed extensively already in this proceeding. For example, the BA states:

“Aquatic systems receive mercury by direct deposition from the atmosphere and from overland transport from within the watershed (EPA 1997b). Mercury primarily enters aquatic systems in an inorganic form where it can adsorb to suspended solids and settle to the bottom (EPA 1997b). It can also be photo reduced in the upper few centimeters of the water’s surface and then evade to the atmosphere. RGM at the sediment-water boundary can be transformed into MeHg by sulfate-reducing bacteria, but this process can also go the other direction, depending on site-specific conditions, so that methyl mercury can be either produced or transformed based on the conditions. The most important areas for methylation are anoxic areas of the aquatic environment, such as wetlands or poorly mixed areas. The vast majority of mercury in fish tissue is in the form of MeHg (EPA 1997b). Rates of methylation processes and bioaccumulation typically vary and depend on many physical-chemical factors.”

Therefore, the comment and its attached article would not change this discussion or findings.

NAVAJO TRANSITIONAL ENERGY COMPANY

Comment 62

Clark Moseley, Chief Executive Officer

OSMRE undertook the 2015 Draft EA to comply with the court's remand order, and in so doing appropriately analyzed Navajo Mine and FCPP impacts during the period March 2012 to July 6, 2016, which corresponds to the period between OSMRE's March 16, 2012 approval and the remanded EA. As

¹ Jeremaison et al., *Sulfate Addition Increases Methylmercury Production in an Experimental Wetland*, 40 *Enviro. Sci. Tech.* 3800 (2006) (attached as Exhibit 1).

part of the 2015 Draft EA's analysis, OSMRE conservatively identified impacts resulting from combustion of 30.8 million tons of coal, which represents the historic amount of coal that FCPP burned through 2013, and the amount of coal to be supplied to FCPP through July 6, 2016. See 2015 Draft EA, Ch. 1, § 1.2.2. OSMRE, in conjunction with the 2015 Draft EA, prepared a Biological Assessment (2015 BA), in which OSMRE analyzed the impacts of combusting Area IV North coal during the remainder of the Proposed Action, i.e., from September 1, 2015 through July 6, 2016, and which took into consideration the Reasonable and Prudent Measures (RPMs) in the United States Fish and Wildlife Service's (Service) Biological Opinion (FCPP/NMEP BO), issued in conjunction with the FCPP/NMEP NEPA process. 2015 BA at ES-2. The 2015 BA, upon which the 2015 Draft EA and FONNSI rely, has now concluded that continued operations, including combustion of Area IV North coal at FCPP will not affect the continued existence of endangered or threatened species. The BA provided for two conservation measures to minimize or avoid impacts on the two listed fish species, including 1) NTEC and Arizona Public Service Company (APS) entering into an agreement to shut down the cooling water intakes pumps during the October and November 2015 stocking period, and 2) prohibiting commencement of operations until after the 2015 spawning season has occurred. 2015 Draft EA, § 1.6.5, at 30. OSMRE stated that the 2015 Draft EA incorporates the conservation measures in the Proposed Action. Both of these conservation measures have been implemented. As the 2015 BA states, OSMRE submitted the 2015 BA to the Service. On October 19, 2015, the Service concurred in OSMRE's effects determination. The 2015 BA, and the Service's concurrence, support OSMRE's decision to approve the Area IV North Mine Plan Revision. OSMRE's 2015 Draft EA and 2015 BA, in NTEC's and MMCo's opinion, fulfill the remand requirements.

Response

OSMRE concurs with NTEC's summary of events and notes that the species conservation measures have been implemented.

Comment 63

Clark Moseley, Chief Executive Officer

OSMRE's conclusion that the Proposed Action will not have substantive cumulative effects on threatened and endangered species, Ch. 5, § 5.2.9.2, is well-founded given the limited duration of the Proposed Action and the conservation measures NTEC has implemented, which have avoided impacts to the listed fish species. OSMRE's determination is also supported by the full suite of RPMs that become effective as of January 1, 2016 as part of the FCPP/NMEP BO, as discussed in OSMRE's 2015 BA. *See, e.g.*, 2015 BA at § 2.3, 2-4 (noting that the RPMs mandated by the USFWS BO will take effect January 2016 and become part of the environmental baseline); *see also* 2015 Draft EA, Ch.4, § 4.9.2.1.1, at 370 (discussing the limited duration of the project for purposes of determining effects under the ESA, the environmental baseline post-2016, and the incorporation of conservation measures in the 2015 BA).

Response

OSMRE concurs with NTEC's summary and that the species conservation measures assigned as part of the FCPP/NMEP BO have been implemented and accounted for as part of the environmental baseline in the cumulative analysis.

Comment 64

Clark Moseley, Chief Executive Officer

The 2015 Draft EA identifies both the proposed action as it existed in 2012 and the Proposed Action for purposes of the 2015 Draft EA and informs the public that only OSMRE's approval of the Area IV North

Mine Plan Revision under SMCRA is analyzed in the 2015 EA because that was the only action set aside by the court. *See* 2015 Draft EA, Ch. 1, at 2 n.l. For example, at the beginning of Chapter 2, the 2015 Draft EA correctly notes that the Proposed Action is the "authorization of mining within Area IV North," and then includes elements of the 2012 EA's proposed action for reference, but, as OSMRE correctly states in Footnote 2, all authorizations and approvals were completed prior to the court's decision, and thus, while discussed in the 2015 Draft EA for purposes of consistency with the 2012 EA, are not proposed actions for purposes of the 2015 Draft EA. The 2015 Draft EA properly notes that NTEC proposed to and did consolidate its existing Nationwide Permits to an Individual Permit (IP), which the Army Corps of Engineers approved. Thus, the discussion of the Nationwide Permits should reflect the fact that mining activities are conducted under the authority of an IP. Similarly, as the 2015 Draft EA properly notes, all work on the Burnhan1 Road realignment has been completed and thus there are no "potential" impacts. As OSMRE notes, the archaeological site potentially impacted by the Burnham Road realignment has been mitigated. Ch.4, § 4.13.2.1.1, at 399.

Response

OSMRE concurs with NTEC's summary of events and analyzing a consolidated package of Individual Permits per ACOE's approval.

Comment 65

Clark Moseley, Chief Executive Officer

Although OSMRE was required by the court's remand order to consider coal combustion impacts from electricity generation at FCPP, contrary to *Department of Transp. v. Public Citizen*, 541 U.S. 752 (2004), the 2015 Draft EA correctly did not consider any alternatives to coal-fired generation at FCPP given that OSMRE has no jurisdiction over FCPP, and that no action for FCPP is the subject of the 2015 Draft EA. Rather, as OSMRE properly acknowledges, even under the no action alternative, with no mining of additional coal in Area IV North being authorized by OSMRE, operation of FCPP and resultant emissions from combustion of stockpiled coal and other areas of the mine would still produce, and in fact have produced, the same volume of emissions as under the Proposed Action, but at a higher cost to NTEC. 2015 Draft EA, Ch. 2, at 60. Because there is no environmental benefit from adopting the no action alternative, and given the significant contrary interests, e.g., the Navajo Nation's sovereignty interests, the Navajo Nation's substantial economic reliance on Navajo Mine and FCPP, NTEC's goals, the federal trust responsibility, and the public interest generally in a reliable baseload source of electric generation, OSMRE correctly identified the alternatives to carry forward for full analysis. The alternatives not carried forward, and any other alternatives that may not have been identified, do not meet the Proposed Action's purpose and need and, regardless, would be beyond the scope of the limited analysis required by the remand. Continued operations at Navajo Mine, mining Navajo coal, a tribal trust asset, and the smaller environmental footprint of the two-Unit FCPP are the best alternative for the Nation, its people, and its communities. Continued operations at the Navajo Mine generate royalty and tax revenue streams for the Navajo Nation and provide long-term and significant employment opportunities for members of the Navajo Nation, the principal Environmental Justice community of concern for impacts from the Navajo Mine. Indeed, for these reasons, and others, alternative forms of energy generation were properly rejected under the FCPP/NM EIS as well, which involved FCPP actions and agencies with jurisdiction over the plant, and, in any event, that analysis is incorporated into the 2015 Draft EA by reference. OSMRE was thus correct in providing significant weight to the positive socioeconomic impacts and to environmental justice

considerations for the Navajo Nation in selecting the Proposed Action as the preferred alternative under the 2015 Draft EA.

Response

OSMRE concurs with NTEC's statement on the selection and analysis of alternatives.

Comment 66

Clark Moseley, Chief Executive Officer

Although the court's orders focused primarily on mercury impacts, which OSMRE analyzed in detail in the 2015 Draft EA, the 2015 Draft EA analyzed air quality impacts more broadly. OSMRE's analysis in the 2015 Draft EA incorporated by reference, for example, the two ecological risk assessments evaluating FCPP emissions included in the FCPP/NMEP EIS. These two ERAs evaluated FCPP emissions within a deposition area, which included a 50-km radius around FCPP, and that extended downstream into the San Juan River arm of Lake Powell. 2015 Draft EA, § 4.7.2, at 350; FCPP/NMEP EIS at 4.1-79 (describing modelling method that resulted in a deposition area of 50-km radius around FCPP). The 2015 Draft EA also concludes that ozone impacts are minor and that combustion of Area IV North coal at FCPP would not change the attainment status of the San Juan Basin. 2015 Draft EA, Ch. 4, § 4.5.2.1.3, at 331. On October 26, 2015, after OSMRE published the 2015 Draft EA, the Environmental Protection Agency (EPA) issued a new rule lowering the NAAQS for ozone to 70 ppb. The new standard does not impact OSMRE's analysis of impacts from 2012 through July 6, 2016 because the new standard will not be effective until December 28, 2015, and will not be fully applicable until October 2017, well after the end date of the Proposed Action. In any case, the 2015 Draft EA discusses the then-proposed standard and concludes that the proposed standard would not lead to a change in the assessment of significance. 2015 Draft EA, Ch. 3, § 3.5.1.1.3. OSMRE also directs the reader to the FCPP/NMEP EIS for a discussion of ozone impacts, which provides further support for OSMRE's analysis with respect to ozone. See 2015 Draft EA Ch. 3, § 3.5.1.1.3, at 111, *id.* at 331; see, e.g., FCPP/NMEP EIS at 4.1-1 02 (noting that the Four Corners area was currently in attainment and that local ozone is expected to decrease upon implementation of the FCPP/NMEP project).

Response

OSMRE concurs with NTEC's statement on the timing, applicability, and appropriate analysis of the new ozone rules.

Comment 67

Clark Moseley, Chief Executive Officer

OSMRE also relied on CEQ's 2014 Guidance on GHG emissions to conduct a social cost of carbon analysis, while acknowledging that such an analysis is not required. 2015 Draft EA, § 4.6.1.3; *id.* at 345. OSMRE's analysis throughout the 2015 Draft EA is consistent with CEQ's 2014 Guidance in that OSMRE provided qualitative and quantitative information regarding FCPP and Navajo Mine's CO_{2e} emissions, including approximate emissions per year, and provided past, present, and future GHG emissions for FCPP, and other sources in New Mexico, as well as other detailed qualitative and quantitative information. *See, e.g.*, Ch. 3, § 3.6; Ch. 4, §§ 4.5, 4.6, Ch. 5, § 5.2.6.1, at 440-441.

Response

OSMRE concurs with NTEC's statement the approach to assessing the social cost of carbon per CEQ guidance.

Comment 68

Clark Moseley, Chief Executive Officer

In sum, in updating the 2012 EA, the 2015 Draft EA provides a detailed review of the potential environmental impacts associated with combustion of Area IV North coal at FCPP, and specifically analyzes impacts of coal combustion on threatened and endangered species. OSMRE's 2015 Draft EA, the 2015 BA, and the Service's concurrence in the determinations in OSMRE's 2015 BA, fully support OSMRE's FONNSI. In addition, the 2015 Draft EA allows for meaningful analysis of the impacts of combusting Area IV North coal at FCPP, which fosters NEPA's goals of informed public participation.

Response

OSMRE concurs with NTEC's statement.

Comment 69

Clark Moseley, Chief Executive Officer

NTEC submitted a list of errata comments attached to the comment letter summarized above in Comments 62-68, as follows:

- Under the No Action alternative, NTEC could mine in Area III through July 2016 as recognized elsewhere in the draft EA.
- Mining in the Lowe Pit was completed in 2015.
- To clarify the extent of disturbance in Area IV North prior to the April 2015 remand order, please revise the following text: "At the time of vacatur, As of March 1, 2015, approximately 530 of the 830 acres of Area IV North were disturbed, and 135 acres of the 310 mineable acres were mined. ~~No other mining activities have been conducted by BNCC within Area IV North.~~
- The Navajo Mine's Federal SMCRA permit was renewed in 2010 and renewed again in 2015 as NM-0003G in the Record of Decision for the FCPP-NMEP EIS. Please update references to the current permit to NM-0003G and the renewal period to 2019 globally in the document.
- As OSMRE correctly notes, Area IV North has always been within BNCC's and now NTEC's SMCRA permit boundaries.
- Please clarify the description of the FCPP intake structures and the range of approach velocities at the FCPP intake screens with the information in the October 2015 Area IV North Mine Plan Revision Biological Assessment (Section 2.2). Per the BA, the intake structures on the river consist of two 8 by 8.5-foot structures upstream of the FCPP weir and depending on the operational mode of the two intakes, approach velocities could range from 0.56 to 0.85 fps, and may depend on the mode of diversion (one intake or two) and the amount each screen is submerged.
- The table [3.5.2] in the version we reviewed does not appear to have data.
- The August 5, 2015 release of tailings water into the Animas River occurred from the Gold King Mine.
- Please revise the following EA text to clarify that the Navajo Mine NPDES sediment ponds are managed as a zero discharge facility, "During mining operations, water from disturbed areas is

routed to NPDES sediment ponds ~~for treatment prior to release~~ where it is impounded and evaporated. In general, the NPDES sediment ponds discharge only in response to extreme precipitation events.”

- The figures [3.11-1], table [3.11-2] and text in Chapter and elsewhere describing the dwellings within the 1-mile project area buffer represent the 2012 conditions. In accordance with the agreements between the individual community members which were approved by the Navajo Nation, NTEC has completed the relocation of two dwellings located within the Area 4 North Resource Area closest to the proposed mining and reclamation activities.
- Please restate the description of FCPP primary components to be consistent with Chapter 1, Section 1.5.6 to clarify that the DFADAs (Dry Fly Ash Disposal Areas) are dry ash disposal areas and that the electric rail line is a primary component of the Navajo Mine.
- In accordance with the Navajo Nation Historic Preservation Department’s Cultural Resources Compliance Form, NTEC has completed all the ethnographic studies, testing, and data recovery for NRHP eligible sites in the Area IV North resource Area. Therefore no additional work is required for the 51 eligible sites in Area IV North. These ethnographic studies and testing and data recovery work are documented in the current second amended Programmatic Agreement (cited in the Draft EA on page 257) regarding management of historic Properties at Navajo Mine Area III, Area IV North, Area IV South, and the Burnham North and South Realignment (executed on December 18, 2014).
- Please revise the following sentence to show that the Picture Cliffs Sandstone (PCS) is not mined at the Navajo Mine. “Mining will occur in the Fruitland Formation ~~and PCS units~~. However, mining will not occur within the alluvium along the main stem of Cottonwood Arroyo.”
- Please revise the following sentence to clarify that most of the NPDES ponds are built to a 100 year, 6 hour event by adding the words, “at a minimum” after “contain surface runoff” and before “from events” in the first paragraph as follows, “The sediment ponds have the capability to discharge during and/or following large storm events but contain surface runoff , at a minimum, from events smaller than the 10-year, 24-hour precipitation in accordance with the NPDES permit.

Response

OSMRE has revised the EA to reflect these errata.