

APPENDIX X-1

**Comments on the Draft License Application and Responses-Excluding
Cultural Resources**

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Cultural Resources**

Summary of DLA Comments and GRDA Responses

#	Entity, Date	Comment	GRDA Response
1	FERC 03/30/2023	Exhibit B <i>Section 1.2, Operation of the Pensacola Project, of Exhibit B of the DLA provides a general description of current project operation from a basin-wide perspective and a detailed description of proposed operation under normal, high, and low flow conditions. However, section 1 does not include a detailed description of current project operation under normal, high, and low flow conditions, and does not describe the target reservoir elevations (or rule curve) used under current project operation. To facilitate Commission staff's review of current and proposed project operation, in the FLA, please: (a) provide a detailed description of current project operation under normal, high flow, and low flow conditions, similar to the description of proposed project operation provided in section 1.2; and (b) include the current rule curve used under current project operation (i.e., subsequent to the August 14, 2015 Commission Order that revised the rule curve).</i>	Exhibit B of the Final License Application (FLA) has been updated to now include Appendix B-8, which contains the information requested by Commission staff in this comment. Because current operational parameters will not apply during the new license period, the requested information has not been placed within the main body of Exhibit B. Instead, Appendix B-8 was added to provide a clear distinction between current operations (under the current rule curve) and the operations anticipated by GRDA. GRDA's anticipated operations are discussed within the main body of Exhibit B and in Appendices B-1, B-3, and B-6. Appendix B-8, Section 1.1 provides a detailed description of current project operation under normal, high flow, and low flow conditions. The current rule curve (subsequent to the August 14, 2015 Order) is included as Table 1.1.1-1 and Figure 1.1.1-1 in Appendix B-8.
2	FERC 03/30/2023	Exhibit B <i>In addition, to facilitate Commission staff's understanding of Grand Lake elevations under current and proposed operation, in the FLA, please provide a graph summarizing observed Grand Lake elevations under current operation (current rule curve). In the graph, please provide five separate curves to show the elevation exceeded 10 percent, 25 percent, 50 percent, 75 percent, and 90 percent of the time for each day. Also, using the Operations Model input conditions, please provide corresponding graphs for modeled elevations under current (current rule curve) and proposed operation.</i>	Graphs showing the computed 10 percent, 25 percent, 50 percent, 75 percent, and 90 percent exceedance values for observed and modeled Grand Lake elevations each day under current operation (current rule curve) are now provided as Appendix B-8.1 to Exhibit B of the FLA. A graph showing each of the same exceedance values for modeled Grand Lake elevations under anticipated operations for each day is provided in Appendix B-1.
3	FERC 03/30/2023	Exhibit B <i>Section 2.1, Average Annual Generation, of Exhibit B of the DLA provides the average annual generation based on the rule curve that was in place prior to the August 14, 2015 Commission Order and section 2.2, Plant Factor, of Exhibit B of the DLA provides historic average annual generation at the project for January 2012 – December 2021. However, neither section 2.1 nor section 2.2 provide the average annual generation based on current operation that occurred after the August 14, 2015 order was issued. In addition, there is no description of the Operations Model input conditions used to estimate average annual generation. To ensure staff has sufficient information to inform environmental and developmental analysis, in Exhibit B of the FLA, please provide the following: (a) actual average generation under current (post-August 14, 2015) operation;</i>	The FLA Exhibit B, Sections 2.1 and 2.2 have been updated to include the following: <ul style="list-style-type: none"> - A description of the input conditions used for the operations model including the inflow data and the USACE procedures for flood control used within the model. - Clarification that the same input conditions were used to model both current and anticipated operations. - A discussion of how the period of historic inflows used as input to the operations model represent a typical distribution of normal, high flow, and low flow conditions. - Modeled average annual generation for anticipated operations. - Modeled average annual generation for anticipated operations during on-peak and off-peak hours. The actual average annual generation under the current operation (post-August 14, 2015) is now provided in Section 2.1 of Appendix B-8. Section 2.1 of Appendix B-8 also now includes the actual average annual generation during on-peak and off-peak hours. The modeled average annual generation for current operations (current rule curve) is also provided in the FLA, Appendix B-8, Section 2.1.

#	Entity, Date	Comment	GRDA Response
		<p>(b) modeled average annual generation for current operation;</p> <p>(c) modeled average annual generation for proposed operation;</p> <p>(d) estimates of average annual generation, during on-peak hours and off-peak hours for items (a), (b), and (c) above;</p> <p>(e) a description of the input conditions for the model, including at a minimum the inflow data and the Army Corps of Engineers (Corps) procedures for flood control used in the model for items (b) and (c) above; and</p> <p>(f) clarification as to whether or not: (i) the same input conditions were used in both current and proposed modeling scenarios; and (ii) the period of historic inflows used represented a typical distribution of normal, high flow, and low flow conditions. (If the response to either item (i) or (ii) is “no,”, then for the FLA please modify the estimates of average annual generation for modeled current operation and modeled proposed operation such that items (i) and (ii) can be answered “yes.”)</p>	The FLA Appendix B-8, Section 2.1 includes the modeled average annual generation for current operations during on-peak and off-peak hours.
4	FERC 03/30/2023	Exhibit B Section 2.3, River Flow Characteristics, of Exhibit B of the DLA provides data on project inflow and discharge. To facilitate Commission staff’s review of project operation, portions of section 2.3 require additional clarification and/or revised presentation, as discussed below.	The FLA Exhibit B, Section 2.3 has been updated to include additional clarification and revised presentation as discussed for items 5 through 7 below.
5	FERC 03/30/2023	Exhibit B Section 2.3 indicates that GRDA adjusted historic U.S. Geological Survey (USGS) gage data (January 1, 1965, to December 31, 2021) based on drainage area to determine inflows at Pensacola Dam. However, section 2.3 does not clearly explain how the adjustments were made to estimate inflow at Pensacola Dam. Therefore, in the FLA, please detail the specific calculations and adjustments that were made to estimate inflow at Pensacola Dam.	The FLA Exhibit B, Section 2.3 has been updated to include a discussion of the calculations and adjustments used to estimate inflow at Pensacola Dam based on the available USGS gage data.
6	FERC 03/30/2023	Exhibit B In addition, table 2.3.1-1, provides the mean monthly flows at the project dam, but it is not clear whether or not the flows in the table represent the adjusted USGS gage data discussed above. Similarly, section 2.3.2, Flow Duration Curves, indicates that the monthly flow-duration curves and the annual exceedance table in Appendix B-1 are based on data collected during the period of record from January 1965 to December 2021, but there is no indication whether or not the data represent the adjusted USGS gage data. Therefore, in the FLA, please clarify whether the data in table 2.3.1-1 and the monthly flow-duration curves and annual exceedance table in Appendix B-1 are representative of the adjusted USGS gage data.	The FLA Exhibit B, Table 2.3.1-1 has been updated to report both un-adjusted (unscaled) and adjusted (scaled) mean monthly flows obtained from the USGS gage data. In addition, Section 2.3.2 has been updated to clarify that the flow duration curves and annual exceedance table in Appendix B-2 was developed using the adjusted USGS gage data.
7	FERC 03/30/2023	Exhibit B Table 2.3.3-1 provides statistics summarizing past discharges from the Pensacola Project. However, the statistics in table 2.3.3-1 represent the data from January 1, 1965, to December 31, 2021, which overlaps two time periods – one for operations under the old rule curve (prior to the August 14, 2015 Commission Order) and another for operations under the current rule curve (after August 14, 2015). Discharges from the project may have been affected by the change in the rule curve. Therefore, in the FLA, please provide the statistics in table 2.3.3-1 for: (a) actual operation under the current rule curve; (b) modeled project discharge under the current rule curve; and (c) modeled project discharge under proposed operation.	<p>The FLA Exhibit B, Tables 2.3.3-1, 2.3.3-2, and 2.3.3-3 have been modified to summarize modeled project discharges for anticipated operations including total, turbine, and spillway discharges.</p> <p>Flow duration curves for total, turbine, and spillway discharges for modeled anticipated operations are included in Appendix B-3.</p> <p>The actual/observed discharges for current operation (post-August 14, 2015) are summarized in Appendix B-8-8, Tables 2.3.1-1, 2.3.1-2, and 2.3.1-3 including total, turbine, and spillway discharges.</p>

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		<i>Please also provide the total, turbine, and spillway discharge for a, b, and c. Finally, please provide the flow duration curves for turbine and spillway discharge, for a, b, and c.</i>	<p>The modeled discharges for current operation are summarized in Appendix B-8, Tables 2.3.1-4, 2.3.1-5, and 2.3.1-6 including total, turbine, and spillway discharges.</p> <p>Flow duration curves for actual/observed total discharge, spillway discharge, and turbine discharge under the current rule curve are included in Appendix B-8.2.</p> <p>Flow duration curves for modeled total discharge, spillway discharge, and turbine discharge under the current rule curve are provided in Appendix B-8.3.</p>
8	FERC 03/30/2023	Exhibit B <i>Section 2.7, Tailwater Rating Curve, of Exhibit B of the DLA discusses tailrace elevations and Appendix B-3 provides a summary of tailrace elevations in the form of a tailrace rating curve. However, to facilitate Commission staff's understanding of tailrace elevations and Lake Hudson elevations under current and proposed operation, additional information is needed. In the FLA, please provide four graphs to summarize modeled tailrace elevations and Lake Hudson elevations under: (a) current project operation (current rule curve); and (b) proposed project operation. In each of the four graphs, please provide five separate curves to show the elevation exceeded 10 percent, 25 percent, 50 percent, 75 percent, and 90 percent of the time for each day.</i>	<p>The FLA Exhibit B, Appendix B-6 now includes the following for the modeled anticipated operations:</p> <ol style="list-style-type: none"> 1) A graph of Pensacola tailrace elevations exceeded 10 percent, 25 percent, 50 percent, 75 percent, and 90 percent of the time for each day. 2) A graph of Lake Hudson elevations exceeded 10 percent, 25 percent, 50 percent, 75 percent, and 90 percent of the time for each day. <p>Exhibit B, Appendix B-8.4 of the FLA includes the following for the modeled current operations (post-August 14, 2015):</p> <ol style="list-style-type: none"> 1) A graph of Pensacola tailrace elevations exceeded 10 percent, 25 percent, 50 percent, 75 percent, and 90 percent of the time for each day. 2) A graph of Lake Hudson elevations exceeded 10 percent, 25 percent, 50 percent, 75 percent, and 90 percent of the time for each day.
9	FERC 03/30/2023	Exhibit B <i>Section 2.4, Dependable Capacity, in Exhibit B of the DLA indicates that the project's dependable capacity is 105.176 megawatts (MW). Section 6, Estimated Value of Project Power, in Exhibit D of the DLA indicates that the average annual accredited capacity is 122 MW. To facilitate Commission staff's review of project operation, in the FLA, please clarify the distinction between the dependable capacity and average annual accredited capacity.</i>	<p>The FLA Exhibit B, Section 2.4 has been updated to define dependable capacity being equal to the Project's limited nameplate capacity (turbine-limited to 17.446 MW for the six main units and generator-limited to 500 kW for the house unit) of 105.176 MW. Since the Commission has no specific method for determining dependable capacity, GRDA has chosen to state the dependable capacity as the nameplate capacity. In Exhibit D, accredited capacity as defined by GRDA is the maximum net generating capacity that can be sustained over a four-hour period modified for environmental, seasonal, operational, and fuel limitations.</p>
10	FERC 03/30/2023	Exhibit B <i>Section 2, Generating Characteristics and Flow Data, of Exhibit B of the DLA, provides data summaries of project inflow, Grand Lake elevation, tailrace elevation, project discharge, and project generation. To facilitate Commission staff's review of project operation, it would be helpful to also have un-summarized data. Therefore, using the Operations Model, please, for both current and proposed modeled conditions, provide daily time-step data output in electronic format (e.g., Microsoft Excel spreadsheet, or delimited text file) for: (a) project inflow; (b) Grand Lake elevation; (c) tailrace elevation; (d) Lake Hudson elevation; (e) project discharge (turbines, spillway, and total); and (e) project generation (on-peak, off-peak, and total).</i>	<p>The requested un-summarized data for modeled current and proposed operations has been provided in Microsoft Excel spreadsheets contained in the FLA as Appendix B-9 and B-10.</p>
11	FERC 03/30/2023	Exhibit D <i>Section 8, Costs to Develop the License Application, of Exhibit D of the DLA indicates that the costs for GRDA to relicense the project will be provided in the FLA. To facilitate Commission staff's review of project costs, in the FLA please also update the costs in sections 5.1.1, Existing Project Valuation, and 5.4, Operation and Maintenance Expenses to the most recent values.</i>	<p>FLA Exhibit D, Sections 5.1.1, 5.4, and 8 have been amended as requested by Commission staff.</p>

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12	FERC 03/30/2023	Exhibit D <i>In section 5.5, Costs for Proposed Environmental Measures, of Exhibit D of the DLA, it appears that the annual operations and maintenance costs for “Lost generation cost for WQ enhancements” consist entirely of costs of lost generation and there is no indication that other measures result in a cost associated with lost generation. To facilitate Commission staff’s review of project costs, please provide separate costs for operation and maintenance and lost generation for any other measures that would result in generation losses. Please report lost generation in megawatt-hours and dollars during both on and off-peak hours.</i>	The requested information has been added to FLA Exhibit D, Section 5.5, Table 5.5-1.
13	FERC 03/30/2023	Exhibit D <i>Section 5.5, Costs for Proposed Environmental Measures, of Exhibit D of the DLA presents costs for “Shoreline and Vegetation Management Plan Implementation” and “Recreation Site Maintenance (formal and informal)” described as “Existing (Updated).” However, it is not clear whether the presented costs include both the current cost of the measure and the proposed (incremental) cost as it differs from the current cost of the measure, or only the proposed (incremental) cost as it differs from the current cost of the measure. Therefore, to facilitate Commission staff’s review of project costs, please ensure that presented costs in the FLA represent only the proposed (incremental) cost as it differs from the current cost of the measure.</i>	FLA Exhibit D, Section 5.5 has been modified to make the clarification requested by Commission staff.
14	FERC 03/30/2023	Exhibit D <i>In addition, to account for each cost only once, Commission staff assumes that capital costs, operation and maintenance costs, and energy losses associated with any current environmental measures described in section 2.1.4, Existing Environmental Measures, of Exhibit E are already accounted for in current project finances (i.e., section 5.1.1, Existing Project Valuation, of Exhibit D; section 5.4, Operation and Maintenance Expenses, of Exhibit D; and section 2.1, Average Annual Generation, of Exhibit B). If staff’s assumption is incorrect, in the FLA please modify sections 5.1.1, 5.4, and 2.1 of Exhibit B, accordingly.</i>	Commission staff’s assumption is correct, current environmental measures described in the FLA Exhibit E, Section 2.1.4, Existing Environmental Measures, are already accounted for in current project finances (i.e., Section 5.1.1, Existing Project Valuation, of Exhibit D; Section 5.4, Operation and Maintenance Expenses, of Exhibit D; and Section 2.1, Average Annual Generation, of Exhibit B and the application has been amended accordingly).
15	FERC 03/30/2023	Exhibit D <i>Section 5.5, Costs for Proposed Environmental Measures, of Exhibit D of the DLA includes the estimated costs of proposed environmental measures in table 5.5-1. Section 2.2.3, Proposed Environmental Measures, of Exhibit E of the DLA provides a list of proposed environmental measures. However, the description of measures and number of measures do not match between table 5.5-1 of Exhibit D and section 2.2.3 of Exhibit E. It is not clear whether the measure listed in table 5.5-1 as “Continue Water Quality Enhancements” is the same measure as the one in section 2.2.3 of Exhibit E referred to as “GRDA will continue to implement the DO Mitigation Plan to reduce impacts of low DO on fish and aquatic resources downstream of the Pensacola Dam.” In addition, section 2.2.3 of Exhibit E indicates that GRDA is proposing to implement construction stormwater best management practices (BMPs) for erosion and sediment control prior to conducting ground disturbing activities related to operation or maintenance of the project. The same section of Exhibit E also indicates that GRDA is proposing to develop a new recreation management plan. However, table 5.5-1 does not include costs for implementing construction stormwater BMPs or developing a new recreation management plan. To facilitate staff’s review and understanding of the cost of environmental measures, please number each measure and ensure that the measures in table 5.5-1 of Exhibit D match the list of environmental measures in section 2.2.3 of Exhibit E. Also, please ensure that each existing environmental measure in table 5.5-1 that is proposed for continuation under any new license issued, includes capital and annual costs only for those costs as they differ from current measures.</i>	FLA Exhibit D, Table 5.5-1 now matches FLA Exhibit E, Section 2.2.3 of the application. Table 5.5-1 has been modified to only include capital and annual costs for those costs as they differ from current measures.

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16	FERC 03/30/2023	Exhibit D <i>Section 6, Estimated Value of Project Power, of Exhibit D of the DLA provides the projected market value for power on the open market, but does not identify the lowest cost alternative source of power for the project's region. To facilitate Commission staff's review of project economics, please identify the lowest cost alternative source of power in the project region.</i>	FLA Exhibit D, Section 6 has been modified to identify the lowest cost alternative source of power for the Project region.																				
17	FERC 03/30/2023	Exhibit D <i>Table 9-1 of Exhibit D of the DLA provides estimates of average gross annual revenue from on-peak and off-peak generation. However, it is not clear why average gross annual revenue in table 9-1 is not equal to the product of energy and nominal market price for average annual off-peak generation. To facilitate Commission staff's review of project revenue, in the FLA, please describe how average gross annual revenue was estimated.</i>	FLA Exhibit D, Section 9 has been modified to indicate that the values of each of the columns shown in Table 9-1 are the average of the 5-year values.																				
18	FERC 03/30/2023	Exhibit D <i>Section 10, Estimated Change in Project Generation and Value of Project Power Due to Changes in Project Operations, of Exhibit D of the DLA provides estimates of average annual generation under baseline operation (i.e., operation prior to the August 14, 2015 Commission Order that revised the project rule curve) and proposed operation. However, section 10 does not include average annual generation for current operations under the current rule curve that has been in place since the August 14, 2015 Commission Order. To facilitate Commission staff's review of project generation, in Exhibit D of the FLA, please provide modeled average annual generation for current operations as well as realized annual generation, reflecting the current rule curve that has been in place since the August 14, 2015 Commission Order.</i>	<p>FLA Exhibit D, Section 10 has been modified to include the modeled average annual generation for current operations as well as realized annual generation, reflecting the current rule curve that has been in place since the August 14, 2015 Commission Order.</p> <p>The first table compares the modeled and realized (actual/observed) power generation for the four overlapping years between the 2015 rule curve change and the end of the modeled period. The second table expands the comparison time window to include every complete year modeled. In general, these results demonstrate that 1) the realized generation is greater than modeled, and 2) the anticipated operations result in increased generation compared to current operations.</p> <p>Table 1 – Comparison of modeled average annual generation to realized annual generation, reflecting the current rule curve that has been in place since the August 14, 2015 Commission Order</p> <table border="1"> <thead> <tr> <th>Average Annual Generation 1/1/2016 through 12/31/2019, 4 years</th> <th>PENS GW·h</th> </tr> </thead> <tbody> <tr> <td>Baseline Operations, Modeled</td> <td>464</td> </tr> <tr> <td>Current Operations, Realized</td> <td>505</td> </tr> <tr> <td>Current Operations, Modeled</td> <td>467</td> </tr> <tr> <td>Anticipated Operations, Modeled</td> <td>493</td> </tr> </tbody> </table> <p>Table 2 – Comparison of modeled average annual generation, including every complete year modeled</p> <table border="1"> <thead> <tr> <th>Average Annual Generation 1/1/2005 through 12/31/2019, 15 years</th> <th>PENS GW·h</th> </tr> </thead> <tbody> <tr> <td>Modeled Baseline Operations</td> <td>413</td> </tr> <tr> <td>Baseline and Current Operations*, Realized</td> <td>453</td> </tr> <tr> <td>Modeled Current Operations</td> <td>414</td> </tr> <tr> <td>Modeled Anticipated Operations</td> <td>433</td> </tr> </tbody> </table> <p>*Operations changed from Baseline to Current following the August 14, 2015 Commission Order.</p>	Average Annual Generation 1/1/2016 through 12/31/2019, 4 years	PENS GW·h	Baseline Operations, Modeled	464	Current Operations, Realized	505	Current Operations, Modeled	467	Anticipated Operations, Modeled	493	Average Annual Generation 1/1/2005 through 12/31/2019, 15 years	PENS GW·h	Modeled Baseline Operations	413	Baseline and Current Operations*, Realized	453	Modeled Current Operations	414	Modeled Anticipated Operations	433
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			In addition, to facilitate the Commission Staff's review of Project generation, it should be noted with the changing power grid from the integration of numerous renewable energy sources such as wind and solar where production is intermittent on an almost daily basis to the power grid, the anticipated operation of the Project that is not restricted to a specific rule curve will allow for an almost immediate response in increased generation to support the stability of the grid at all times. GRDA has been requested by the SPP to increase generation to stabilize the grid in the region due to unexpected significant reductions of generation from numerous independent wind and solar renewable energy sources.
19	FERC 03/30/2023	Exhibit E-General <i>Exhibit E of the DLA includes citations for several references and reports that will need to be part of the public record for this project. Please include with the FLA, copies of the following documents:</i> <i>(a) Atkinson, C.A, Jolley, D.F, and Simpson, S.L. 2007. Effect of overlying water pH, dissolved oxygen, salinity and sediment disturbances on metal release and sequestration from metal contaminated marine sediments. Chemosphere, 69:1428-1437;</i> <i>(b) Fisher, W. L. and A. V. Zale. 1990. Effects of the Pensacola hydropower project on the fishery resource of the Grand River. Component A.2. Final report to the Grand River Dam Authority, Vinita, Oklahoma. 39pp.</i> <i>(c) McCormik, C.A. 1985. Water Quality and Sediments of an Area Receiving Acid-mine Drainage in Northeastern Oklahoma. MS Thesis. Oklahoma State University, Stillwater, OK;</i> <i>(d) Morrison S., S. Nikolai, D. Townsend, J. Belden. 2014. Distribution and Bioavailability of trace metals in shallow sediments from Grand Lake, OK. Paper Presented at the American Society of Mining and Reclamation Conference, Oklahoma City, Oklahoma; and</i> <i>(e) OWRB (Oklahoma Water Resources Board) and OSU (Oklahoma State University). 1995. Diagnostic and Feasibility Study of Grand Lake O' The Cherokees, Phase I of a Clean Lakes Project, Final Report. March 10, 1995.</i>	GRDA eFiled these reports with the Commission as a separate submittal on May 1, 2023. See FERC Accession No. 202305-1-5497.
20	FERC 03/30/2023	Exhibit E-General <i>Section 5.18(b)(4)(i) of the Commission's regulations requires that Exhibit E include maps showing existing and proposed project facilities, lands, and waters within the project boundary. However, Exhibit E does not include any maps showing existing and proposed project facilities, lands, and waters within the project boundary. Please include the required maps in Exhibit E of the FLA.</i>	The additional map figures have been included in FLA Exhibit E, Section 2.2.1.
21	FERC 03/30/2023	Exhibit E-General <i>Section 2.1.3.2, Low Flow Operations, of Exhibit E of the DLA indicates that GRDA currently implements a Drought Adaptive Management Plan (DAMP) and that the DAMP is in Appendix B-1. However, Appendix B-1 only includes flow duration curves and an exceedance table. Commission staff are unable to locate the DAMP in the DLA. Therefore, to ensure staff has sufficient information to inform an environmental analysis, in the FLA, please include a copy of the DAMP.</i>	A copy of the existing Drought Adaptive Management Plan (DAMP) has been included in the FLA as an Appendix to Exhibit E. However, as explained in Exhibit E, Section 2.2.2.2, GRDA anticipates it will no longer be operating under a rule curve during the new license term. Therefore, the DAMP, which outlines a procedure and actions to be taken in the event reservoir elevations are unable to stay above the rule curve target elevations, is not necessary under the anticipated operation (which do not include a rule curve requirement). For this reason, GRDA is not proposing continuation of the DAMP under the new license.
22	FERC 03/30/2023	Exhibit E-General <i>Section 2.2.2, Proposed (Anticipated) Project Operation, of Exhibit E of the DLA, indicates that GRDA proposes to fluctuate reservoir levels within the elevation range of 742 and 745 feet Pensacola Datum (PD), for the purpose of responding to grid demands, market conditions, and the public interest. However, Exhibit E does not discuss the frequency of proposed fluctuations between 742 and 745 feet PD. To ensure staff has sufficient information to inform an environmental analysis, in the FLA, please discuss: (a) how frequently reservoir elevations would fluctuate between 742 and 745 feet PD; and (b) any seasonal differences in the frequency of proposed fluctuations.</i>	FLA Exhibit E, Section 3.4.2.1-Effects of Project Operations on Reservoir Levels has been updated to include a discussion on how frequently reservoir elevations fluctuate between 742 and 745 feet PD and any seasonal differences in the frequency of the anticipated fluctuations. While providing this additional information requested by Commission staff, GRDA respectfully submits that staff incorrectly states that GRDA "proposes to fluctuate reservoir levels within the elevation range of 742 and 745 feet . . ." (emphasis added). To be clear, for purposes of the Commission's obligations under NEPA in this relicensing proceeding, GRDA's operations at the Project relative to reservoir levels at Grand

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			<p>Lake once the current license expires should not be considered part of the federal action in this relicensing proceeding. NEPA regulations define a “major federal action” as excluding “[a]ctivities or decisions that are non-discretionary and made in accordance with the agency’s statutory authority.” 40 C.F.R. § 1501.1(q)(1)(ii). In this case, Congress in the National Defense Authorization Act for Fiscal Year 2020 (NDAA 2020) removed authority for the Commission (and all other federal and state agencies) to regulate water surface elevations within Grand Lake’s conservation pool. Pub. L. No. 16-92, § 7612(b)(2). Because the Commission lacks discretionary authority to regulate water surface elevations at Grand Lake, any such operational parameters cannot be considered part of the “proposed action” for NEPA purposes.</p> <p>Nonetheless, GRDA recognizes the relevance of the information requested by Commission staff. GRDA’s anticipated Project operations relating to water surface elevations at Grand Lake during the new license term, while not part of the “proposed action” of this relicensing, are either indirect or cumulative effects of that proposed action. See 40 C.F.R. §§ 1508.1(g)(2), (3).</p>
23	FERC 03/30/2023	<p>Exhibit E-Water Resources <i>Section 3.4.1.2.3, Current Water Monitoring Data, of Exhibit E of the DLA indicates that GRDA monitors water quality in Grand Lake by taking near-surface and water column profile samples at 15 sampling sites in Grand Lake. However, section 3.4.1.2.3 does not describe the sampling locations or water quality variables that are measured at each site. To ensure staff has sufficient information to inform an environmental analysis, in the FLA, please: (a) provide a map showing all 15 water quality sampling locations; (b) identify the water quality variables measured at each site; and (c) indicate if the water quality variables are measured using near-surface sampling, water column sampling, and/or another method.</i></p>	<p>FLA Exhibit E, Section 3.4.1.2.3 has been updated to include a map showing all 15 water quality sampling locations and a table identifying the water quality variables measured at each site and depth of sampling.</p>
24	FERC 03/30/2023	<p>Exhibit E-Water Resources <i>Table 3.4.1.2.3-1 of Exhibit E of the DLA provides the results of surface water quality monitoring in Grand Lake from 2017 to 2021. However, the table does not include a description of the statistical parameter that is displayed for each water quality variable, season, and location combination. For example, in the row and column representing Secchi depth during the winter at the “Lower” location the value is 1.32±0.55. However, it is not clear whether 1.32 represents the mean, median, or some other statistical parameter representing the Secchi depth. Further, it is not clear whether 0.55 represents the standard deviation, standard error, or some other measure of variability. Therefore, in the FLA, please clarify the statistical parameter and measure of variability presented in table 3.4.1.2.3-1.</i></p>	<p>FLA Exhibit E, Table 3.4.1.2.3-2 (which was Table 3.4.1.2.3-1 in the DLA) has been updated to explain the statistical parameter displayed in each water quality variable, season, and location combination.</p>
25	FERC 03/30/2023	<p>Exhibit E-Water Resources <i>As discussed, above, table 3.4.1.2.3-1 includes a single statistical parameter plus a measure of variability for each water quality variable, season, and location combination. To inform staff’s environmental analysis, it would also be helpful if in addition to the single statistical parameter, the table included the minimum and maximum values for each water quality variable, season, and location combination. Therefore, in the FLA, please add to table 3.4.1.2.3-1, the minimum and maximum values for each water quality variable, season, and location combination.</i></p>	<p>FLA Exhibit E, Table 3.4.1.2.3-2 (which was Table 3.4.1.2.3-1 in the DLA) has been updated to include the minimum and maximum values for each water quality variable, season, and location combination.</p>
26	FERC 03/30/2023	<p>Exhibit E-Water Resources <i>In addition, the top row of table 3.4.1.2.3-1 has three columns labeled, “Lower”, “Middle”, and “Upper.” However, it is not clear whether “Lower”, “Middle”, and “Upper” represent positions in the water column or locations in Grand Lake. To ensure staff has sufficient information to inform an environmental analysis, please include the following in the FLA: (a) a definition of what “Lower”, “Middle”, and “Upper”</i></p>	<p>FLA Exhibit E, Table 3.4.1.2.3-2 (which was Table 3.4.1.2.3-1 in the DLA), has been updated to explain which monitoring locations are included in the “Lower,” “Middle,” and “Upper” areas of Grand Lake.</p>

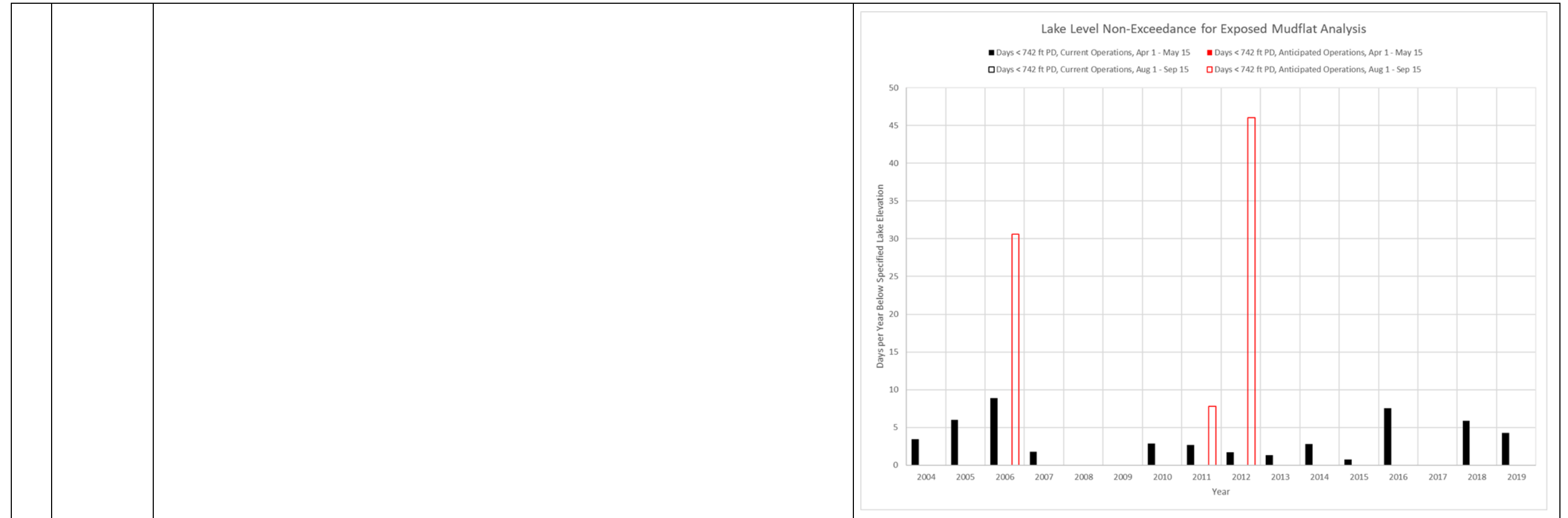
#	Entity, Date	Comment	GRDA Response
		<i>represent in table 3.4.1.2.3-1; and (b) if “Lower”, “Middle”, and “Upper” represent locations in Grand Lake, please clarify how these locations relate to the 15 water quality sampling locations previously discussed in item 19 above.</i>	
27	FERC 03/30/2023	Exhibit E-Water Resources <i>Table 3.4.1.2.3-1 also includes columns labeled “Winter”, “Spring”, “Summer”, and “Autumn”, but the date range represented by each of those seasons is not described in the table caption or in the text of section 3.4.1.2.3, Current Water Quality Monitoring Data. Therefore, in the FLA, please specify the date range represented by each of the seasons included in table 3.4.1.2.3.</i>	FLA Exhibit E, Section 3.4.1.2.3 has been updated to provide the date ranges for the periods of “Winter,” “Spring,” “Summer,” and “Autumn,” as requested by Commission staff.
28	FERC 03/30/2023	Exhibit E-Water Resources <i>The DO Mitigation Plan included in Appendix E-10 of Exhibit E of the DLA indicates that specific releases (about 320 cfs) will be made when DO downstream of Pensacola Dam reaches an action limit of 6.0 milligrams per liter (mg/L) from October 16 through June 15 and 5.0 mg/L from June 16 through October 15. The DO Mitigation Plan also indicates that additional releases (about 430 cfs) will be made when DO reaches 4.0 mg/L. Section 3.4.2.4, Effects of Project Operation on Water Quality, of Exhibit E of the DLA indicates that beginning in 2018, the action limits were each updated, increasing them by 0.5 mg/L, to 6.5 mg/L from October 16 through June 15, 5.5 mg/L from June 16 through October 15, and 4.5 mg/L for additional releases. However, the 2018 updates discussed above are not included in the DO Mitigation Plan included in Appendix E-10 of the DLA. Therefore, to clarify the downstream DO mitigation requirements of the existing license, please explain where the 2018 updates discussed above are specified.</i>	The increased action limits were first proposed in GRDA’s April 2, 2018 annual report for dissolved oxygen prepared by the OWRB. This report was filed with the Commission. See Accession # 20180402-5302. Unfortunately, the DO mitigation plan included as Appendix E-10 was not updated for the action limit increases to 6.5, 5.5, and 4.5 mg/L. The change is documented in each of the successive monitoring reports including the April 17, 2023 monitoring report, which also was filed with the Commission. See Accession # 20230417-5056. To assure the most-recent requirements are proposed as intended, GRDA has created an updated DO Mitigation Plan that includes all the current adaptive management measures agreed upon with the OWRB for DO mitigation at the Project. The Updated DO Mitigation Plan is included as an appendix to Exhibit E of the FLA.
29	FERC 03/30/2023	Exhibit E-Water Resources Section 3.4.2.4, Effects of Project Operation on Water Quality, section 3.5.2.1.3, Spawning Habitat for Lake Spawning Fish, and section 3.5.2.2, Effects of Project Operation on Macroinvertebrates and Mussels of Exhibit E, each discuss the effects of GRDA’s proposal to operate at a higher reservoir maximum elevation (745 feet PD) compared to the existing maximum elevation (744 feet PD). However, those sections do not include a discussion of the effects of the proposal to fluctuate reservoir levels within the elevation range of 742 and 745 feet PD, rather than use a rule curve with seasonal target elevations. Therefore, to ensure staff has sufficient information to inform an environmental analysis, please provide a discussion of the effects of proposed reservoir fluctuations on reservoir water quality, lake spawning fish, and macroinvertebrates and mussels, respectively, in sections 3.4.2.4, 3.5.2.2, and 3.5.2.1.3 of the FLA. In each section, please also include separate discussions to compare the effects of proposed reservoir fluctuations relative to using the rule curve.	For the purposes of informing the environmental analysis, FLA Exhibit E, Sections 3.4.2.4, 3.5.2.1.3, and 3.5.2.2 have been updated to provide a discussion of the effects of anticipated reservoir fluctuations on reservoir water quality, lake spawning fish, and macroinvertebrates and mussels, respectively compared to using the rule curve. It should be noted as demonstrated in the response to comment #2, graphs showing the computed 10 percent, 25 percent, 50 percent, 75 percent, and 90 percent exceedance values for observed and modeled Grand Lake elevations each day under current operation (current rule curve) are now provided as Appendix B-8.1 to Exhibit B of the FLA. They demonstrate, the current operation as observed (and as it has shaped the ecosystem) exceeded 745 feet PD at least once per year with a 75% confidence, while the anticipated operation expects to exceed 745 feet PD, several times each year with only a 50% confidence and approximately 744.4 feet PD once per year with a 75% confidence (See also the graphs in Appendix B-1). Therefore, to characterize the anticipated operation as “...to operate at a higher reservoir maximum elevation (745 feet PD) compared to the existing maximum elevation (744 feet PD)” is not an accurate way to compare or describe the two operation scenarios and can easily be misleading. GRDA suggests a description of the current operation to use “with the current rule curve” and the anticipated operation to use “without a rule curve.” The same can be said for minimum elevations. Regarding minimum elevations, the current operation as observed (and as it has shaped the current ecosystem) drops to an elevation of 741 feet PD on at least two occasions each year with a 10% confidence (See Appendix B-8.1) and the anticipated operation only drops to the 741.8 to 741.9 feet PD range on two occasions each year with a 10% confidence level.

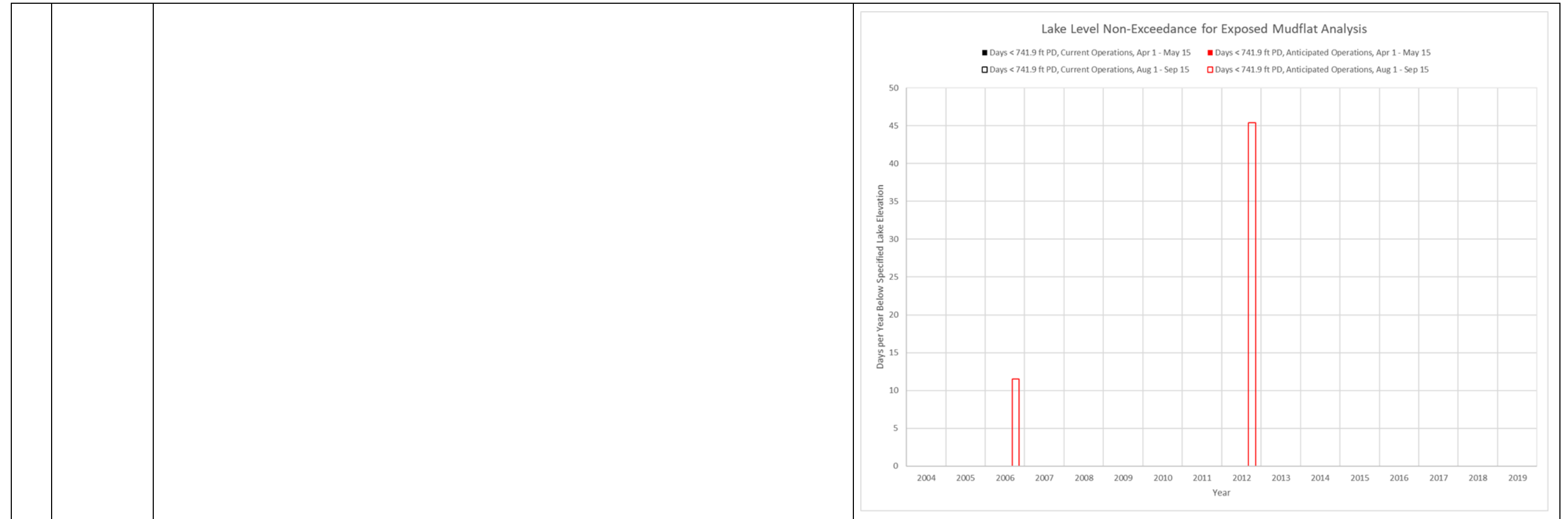
#	Entity, Date	Comment	GRDA Response
			<p>Therefore, to characterize the anticipated operation as “...to fluctuate reservoir levels within the elevation range of 742 and 745 feet PD)...” is not an accurate way to compare or describe the two operation scenarios. GRDA suggests a description of the current operation to use “with the current rule curve” and the anticipated operation to use “without a rule curve.”</p> <p>Finally, although GRDA is providing this additional information as requested by Commission staff, GRDA emphasizes that Commission staff incorrectly states in its comment that reservoir fluctuations during the new license term are “proposed.” As discussed in GRDA’s response to Comment #22, Project operations relating to Grand Lake reservoir levels are not part of this relicensing proposed action. Accordingly, the information sought by Commission staff in this comment—i.e., effects of “reservoir fluctuations on reservoir water quality, lake spawning fish, and macroinvertebrates and mussels”—must be evaluated as indirect or cumulative effects of the proposed action.</p>
30	FERC 03/30/2023	<p>Exhibit E-Fish and Aquatic Resources <i>Section 3.5.1.1, Wetlands and Aquatic Habitat, in Exhibit E of the DLA includes a discussion of wetlands affected environment but does not discuss aquatic habitat in Grand Lake or in the downstream tailwaters. Section 6.3.1, Grand Lake Aquatic Habitat, of the PAD filed on February 1, 2017, includes a discussion of aquatic habitat in Grand Lake including substrates and shoreline structure. In addition, section 6.3.2, Pensacola Dam Tailwater, of the PAD includes a discussion of tailwater habitat, including bathymetry and substrates. In the FLA, please include the Grand Lake and tailwater aquatic habitat information presented in the PAD for all stakeholders to review and to ensure that information needed to conduct an environmental analysis is present in one document. Specifically, in section 3.5.1.1 of the FLA, please include:</i> <i>(a) a discussion of all information available regarding Grand Lake and tailwater bathymetry, habitat, and substrates; and (b) copies of all relevant study reports, including the following reports cited in the PAD:</i> <i>(i) Oklahoma Water Resources Board. 2009. Hydrographic Survey of Grand Lake. August 19, 2009; and</i> <i>(ii) Oklahoma Water Resources Board. 2011. Hydrographic Survey of GRDA Tailraces. October 11, 2011.</i></p>	<p>A discussion of all information available regarding Grand Lake and tailwater bathymetry, habitat and substrates, and copies of all relevant study reports have been included in FLA Exhibit E, Section 3.5.1.1.</p>
31	FERC 03/30/2023	<p>Exhibit E-Fish and Aquatic Resources <i>Table 3.5.1.2.1-1 in Exhibit E of the DLA lists 35 fish species known to occur in the vicinity of the Pensacola Project and includes citations to GRDA’s PAD and Oklahoma DWC (2008). However, Oklahoma DWC (2008) only mentions 12 species and GRDA’s PAD does not provide references supporting the presence of the fish species in table 3.5.1.2.1-1. Table 3.5.1.2.1-1 also does not indicate whether the fish species in the table are known to occur in Grand Lake, downstream in the project tailwaters, or both. Therefore, to ensure staff has sufficient information to inform an environmental analysis, please: (a) provide references in the FLA that support the list of 35 fish species presented in table 3.5.1.2.1-1 (and if any of the references are not publicly available, please include copies of those references with the FLA) and (b) revise table 3.5.1.2.1-1 in the FLA to describe whether each species is known to occur in Grand Lake, downstream in the tailwaters, or both.</i></p>	<p>GRDA has updated FLA Exhibit E, Table 3.5.1.2.1-1, which now supports the species listed in that table. We have cross-referenced this information with various reports and publications to provide the Commission with a robust understanding of the various fish species within the Project tributaries, Project vicinity, and Project boundary itself. We have also demarcated subterranean, tributary, lake, or tailwater to provide further clarity.</p> <p>The unique geography of the Project area provides a faunally rich environment from the Ozark highland stream fishes as well as those fishes more endemic to the Great Plains and large river systems. To aid in the Commission’s assessment of Project effects, GRDA has also included a fish species list by county for Ottawa, Mayes, Delaware, and Craig Counties. We retrieved this information from the Oklahoma Natural History Inventory-Oklahoma Biodiversity System.</p> <p>Please note that the ODWC fisheries management plan mainly focuses on recreationally and commercially important species and is not an exhaustive list of the fish fauna that may be located in the Project area.</p>
32	FERC 03/30/2023	<p>Exhibit E-Fish and Aquatic Resources <i>Section 3.5.2.3, Effects of Entrainment on Fish Populations, of Exhibit E of the DLA summarizes the results of the 1990 Entrainment Study Report and discusses entrainment of fish at the Pensacola Project. However,</i></p>	<p>FLA Exhibit E, Section 3.5.2.3 has been updated to include the (a) trash rack open bar spacing; and (b) estimated approach velocities in front of the trash racks, including all calculations and assumptions used to estimate approach velocities.</p>

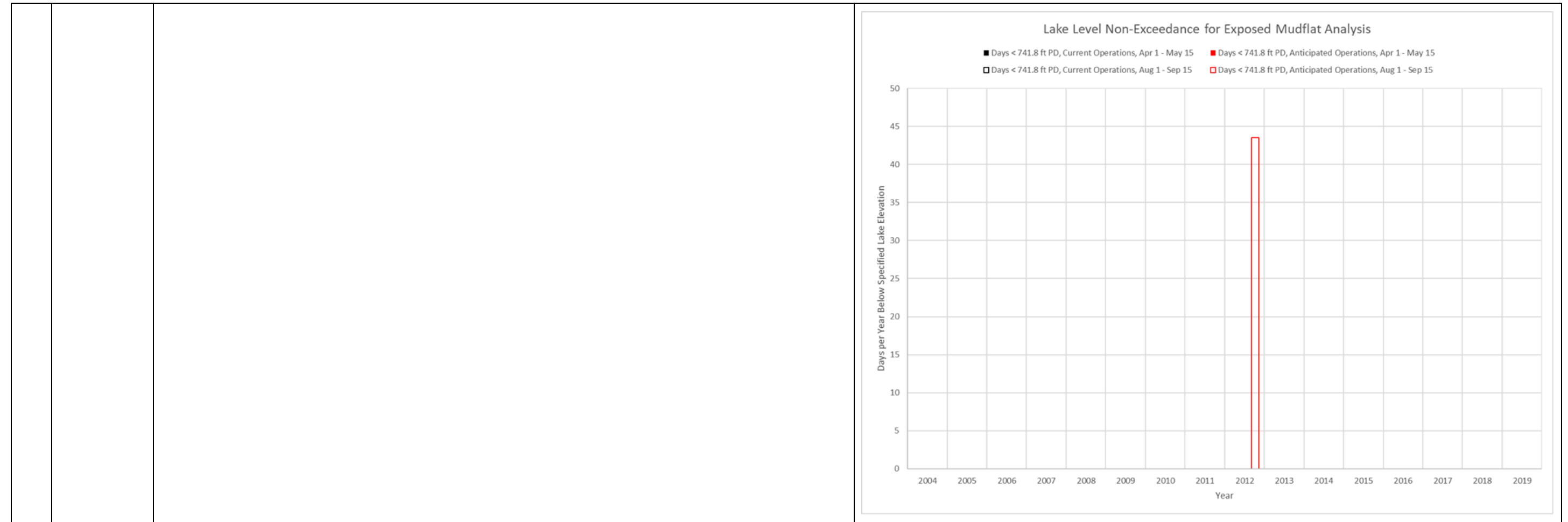
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		<i>in the discussion and in the report, there is no mention of trash rack bar spacing or the approach velocities in front of the trash racks. To ensure staff has sufficient information to address entrainment effects in an environmental analysis, please specify the: (a) trash rack open bar spacing; and (b) estimated approach velocities in front of the trash racks, including all calculations and assumptions used to estimate approach velocities.</i>	
33	FERC 03/30/2023	Exhibit E-Fish and Aquatic Resources <i>Appendix E-12 of Exhibit E of the DLA includes an updated Aquatic Species of Concern Study Report. Table D3 of Appendix D of the report includes Neosho madtom sampling locations in the “Site” column. Two of the sampling locations are from historical surveys not conducted by GRDA and are labeled as “NOPL – 79312,75490,67425” and “NOPL – ONHI”, but it is not clear who conducted the surveys or when they were conducted. To ensure staff has sufficient information to conduct an environmental analysis, in the FLA, please: (a) specify who conducted the surveys labeled as “NOPL – 79312,75490,67425” and “NOPL – ONHI”; (b) specify when the surveys in item (a) were conducted; and (c) provide any relevant study reports related to surveys in item (a).</i>	The data reference was to provide historic accounts of species presence and absence in the Project vicinity as part of the background research required in the ISR, to guide future studies. These data come from the Oklahoma Natural Heritage Inventory (ONHI), maintained by the University of Oklahoma Biological Survey. GRDA has provided in the FLA Exhibit E, Section 3.5.1.2.2 all the additional survey information for historic accounts it could locate.
34	FERC 03/30/2023	Exhibit E-Terrestrial Resources <i>In comments on the USR filed November 29, 2022, Commission staff requested additional information about the composition of the existing wetland community around Grand Lake. Specifically, staff requested that the DLA include: (a) existing wetland acreage by habitat type within elevation bands 741 feet to 742 feet PD, 742 feet to 743 feet PD, 743 feet to 744 feet PD, and 744 feet to 745 feet PD; (b) daily average low water elevation during the growing season for pre-2015 operating rules, and proposed conditions; and (c) average total days of inundation, during the growing season by the elevation bands identified for pre-2015 operating rules and proposed conditions.</i>	FLA Exhibit E, Section 3.5.2.1 has been updated to include existing wetland acreage by habitat type within elevation bands 741 feet to 742 feet PD, 742 feet to 743 feet PD, 743 feet to 744 feet PD, and 744 feet to 745 feet PD; daily average low water elevation during the growing season for pre-2015 operating rules, and proposed conditions; and average total days of inundation, during the growing season by the elevation bands identified for anticipated conditions.
35	FERC 03/30/2023	Exhibit E-Terrestrial Resources <i>Section 3.5.1.1, Wetlands and Aquatic Habitat-Affected Environment, of Exhibit E of the DLA provides total wetland acreages within the current project boundary upstream and downstream of the dam (4,221.7 acres and 246.5 acres, respectively), but the DLA does not include the information staff requested in comments on the USR. The DLA provides only acreages by wetland type within the elevation band between the current median reservoir elevation and proposed median reservoir elevation (termed the ‘wetland study area’ in the DLA). However, changes in soil moisture content and periods of inundation would occur outside of this range. Thus, in order to support a complete functional assessment of project effects, including staff’s analysis of the relationships between inundation frequency, elevation, and wetland type, in the FLA, please provide the data staff requested in the USR comment letter (and described above). In addition, please provide the: (a) daily average low water elevation during the growing season for current conditions; and (b) average total days of inundation, during the growing season by the elevation bands identified for current conditions.</i>	<p>FLA Exhibit E, Section 3.5.1.1 has been updated to include existing wetland acreage by habitat type within elevation bands 741 feet to 742 feet PD, 742 feet to 743 feet PD, 743 feet to 744 feet PD, and 744 feet to 745 feet PD,</p> <p>FLA Exhibit E, Section 3.5.2.1 has been updated to include the daily average low water elevation of 743.07 feet PD during the growing season for pre-2015 operating rules and 743.33 feet PD for the anticipated conditions. Section 3.5.2.1 also includes the average total days of inundation, during the growing season by the elevation bands identified for pre-2015 current conditions as follows:</p> <p>Average Total Days of Inundation per Growing Season Above 741 feet PD 218 Average Total Days of Inundation per Growing Season Above 742 feet PD 193 Average Total Days of Inundation per Growing Season Above 743 feet PD 120 Average Total Days of Inundation per Growing Season Above 744 feet PD 59 Average Total Days of Inundation per Growing Season Above 745 feet PD 27</p> <p>Although GRDA is providing this additional information as requested by Commission staff, GRDA emphasizes that Commission staff characterized the median reservoir level during the new license term as “proposed.” As discussed in GRDA’s response to Comment #22, Project operations relating to Grand Lake reservoir levels are not part of this relicensing proposed action. Accordingly, the information sought by Commission staff in this comment is intended to inform only any indirect or cumulative effects of the proposed action.</p>

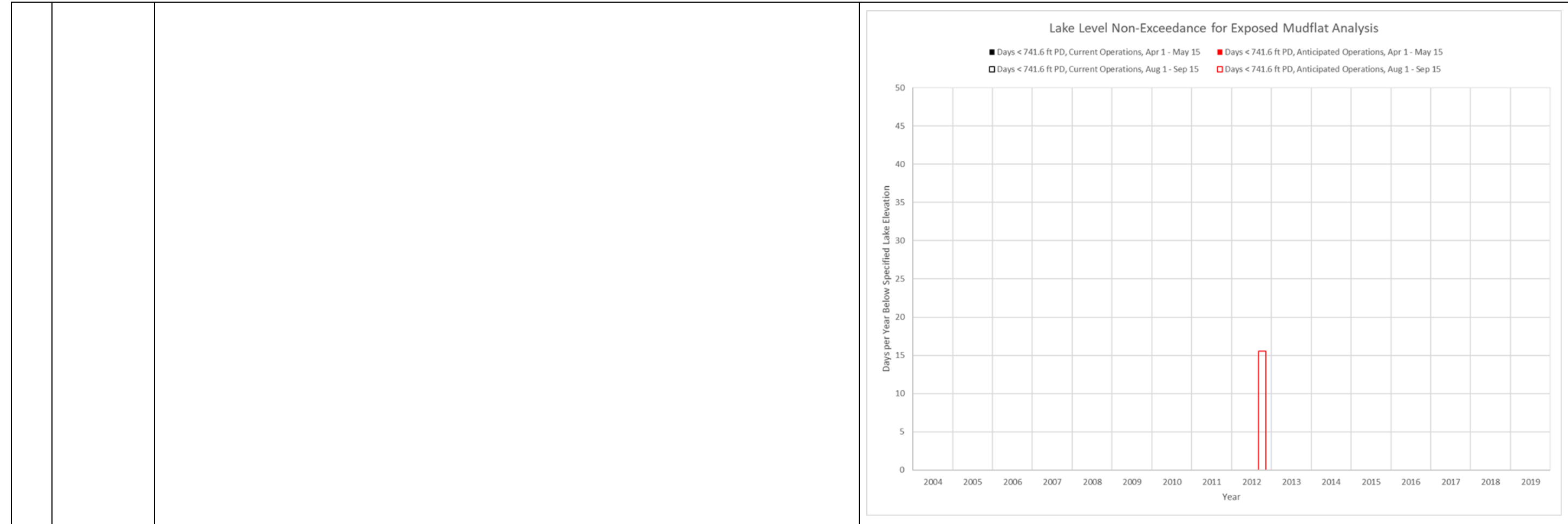
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36	FERC 03/30/2023	Exhibit E-Terrestrial Resources <i>Section 3.5.2.1, Effects of Project Operations on Aquatic Habitat and Resources, of Exhibit E of the DLA discusses potential effects of proposed project operation on wetlands. This section estimates that proposed project operation would increase the median reservoir elevation by 0.54 feet and would result in a net increase in wetlands or conversion of wetlands from one wetland type to another. However, these estimates are not quantified and there is no discussion of the potential for increased water levels to convert existing wetlands to open water, thereby reducing acreage of wetlands. To facilitate Commission staff's review of these potential effects, in the FLA, please provide a quantitative estimate of wetland type conversions that are anticipated to occur under proposed project operation. Please base the analysis on existing relationships between wetland type and average number of days of inundation during the growing season under pre-2015 operating rules and current conditions.</i>	FLA Exhibit E, Section 3.5.2.1 has been updated to provide a quantitative estimate of wetland type conversions that are anticipated to occur under proposed project operation. Although GRDA is providing this additional information as requested by Commission staff, GRDA emphasizes that Commission staff incorrectly states in its comment that reservoir fluctuations during the new license term are "proposed." As discussed in GRDA's response to Comment #22, Project operations relating to Grand Lake reservoir levels are not part of this relicensing proposed action. Accordingly, the information sought by Commission staff in this comment related to wetlands is intended to inform only any indirect or cumulative effects of the proposed action.
37	FERC 03/30/2023	Exhibit E-Threatened and Endangered Species <i>Section 5.18(b)(3)(ii) of the Commission's regulations requires that an applicant designated as the Commission's non-Federal representative for informal consultation under the Endangered Species Act (ESA), include a draft biological assessment in the FLA. GRDA was granted designation as the Commission's non-Federal representative for informal ESA consultation on January 12, 2018. Section 1.3.3, Endangered Species Act, of Exhibit E of the DLA indicates that there are thirteen federally listed species that may occur in the vicinity of the project and section 3.7, Threatened and Endangered Species provides an analysis of anticipated project effects on listed species. However, the DLA does not include a draft biological assessment. To ensure the FLA includes all of the information needed to conduct informal consultation under the ESA, please include a draft biological assessment with the FLA.</i>	A draft biological assessment of the thirteen federally listed species is included as an appendix to FLA Exhibit E, as requested by Commission staff.
38	FERC 03/30/2023	Exhibit E-Threatened and Endangered Species <i>Section 3.7.1, Threatened and Endangered Resources - Affected Environment, of Exhibit E of the DLA notes that both piping plover and rufa red knot may use mudflats or sandbars associated with the project during their migrations through the project area. The DLA states that since both species are unlikely to rely upon habitat within the project, project operation would be unlikely to adversely affect these species. However, there is no discussion on the degree to which proposed changes in project operation would increase or decrease the presence of mudflats at the project during the migratory seasons, or the extent to which other mudflats are available in the project vicinity. To ensure staff has sufficient information to inform an environmental analysis, in the FLA, please include a discussion of the potential for proposed project operation to alter the extent of exposed mudflats during the migratory seasons for piping plover and rufa red knot compared to existing operation. Please base the discussion on project bathymetry and the results of the Hydrologic and Hydraulic Study.</i>	The mudflats as mentioned in Exhibit E of the DLA are well-documented in the Commission's Environmental Assessment for the Application for Amendment of License to Modify Rule Curve dated December 6, 1996 (Accession No. 961206-0071). According to the 1996 environmental assessment (EA) which cited Erickson and Leslie, 1988, operation elevations between 735 to 742 feet PD produce 4,993.9 acres of mudflats. In addition, according to the ODWC, as outlined in the EA, an operation down to an elevation of 741.0 feet PD would expose 500 to 1,000 acres of mudflats. The 500 to 1,000 acres of mudflats are the mudflats referenced in Exhibit E of the DLA. The mudflats referenced in the DLA are only pertinent to any discussion of impacts if the Commission is to complete a review of the baseline operations as defined in the DLA because the baseline operations analysis includes a target of 741.0 feet PD August 15 to October 15 each year prior to 2016. In late 2015 the operational minimum target was established at 742.0 feet PD which is the current operation. Prior to the change, GRDA consulted with the FWS on its July 30, 2015 application (Accession No. 20150730-5167). The FWS in their letter dated June 29, 2015 concluded the variance eliminating the August 15 to October 15 target of 741.0 feet PD was not likely to adversely affect federally-listed species. Since the baseline operation that was authorized in late 2015 no longer includes a target of 741.0 feet, the mudflats no longer form regularly and therefore are not part of the current operation. The mention of mudflats for the piping plover and the rufus red knot has been eliminated from Exhibit E in the FLA. The following graphs prepared by the OM model for the period 2004-2019 show how often under the post-2015 operating requirements (current operation) and the anticipated operation would drop below 742.0 feet PD to create an additional 500 to 1,000 acres of mudflats (if the dropped all the way to 741.0 feet PD). The results below show, except for approximately 10 days in 2006, and approximately 45 days in 2012 (during drought periods) for both the current and anticipated operation, the elevation does not drop below 741.9 feet PD. The exceptions in 2006 and 2012 would happen under the anticipated operation, with the lowest elevation of 741.9 feet PD in 2006 and no lower than 741.4 in 2012. Therefore, mudflats are no longer formed on Grand Lake under the current operation and may be infrequently formed during periods of

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			drought under the anticipated operation causing the presence of mudflats to no longer be a factor in assessing impacts to piping plover or rufa red knot.









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			<div data-bbox="1681 278 2915 1165" data-label="Figure"> <table border="1"> <caption>Lake Level Non-Exceedance for Exposed Mudflat Analysis</caption> <thead> <tr> <th>Year</th> <th>Days < 741.5 ft PD, Current Operations, Apr 1 - May 15</th> <th>Days < 741.5 ft PD, Anticipated Operations, Apr 1 - May 15</th> <th>Days < 741.5 ft PD, Current Operations, Aug 1 - Sep 15</th> <th>Days < 741.5 ft PD, Anticipated Operations, Aug 1 - Sep 15</th> </tr> </thead> <tbody> <tr><td>2004</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>2005</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>2006</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>2007</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>2008</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>2009</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>2010</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>2011</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>2012</td><td>0</td><td>0</td><td>0</td><td>3</td></tr> <tr><td>2013</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>2014</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>2015</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>2016</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>2017</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>2018</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>2019</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> </tbody> </table> </div> <div data-bbox="1681 1205 2915 1395" data-label="Text"> <p>According to the Oklahoma Biodiversity Information System (OBIS Search (ou.edu)) there is only one recorded sighting of a piping plover in Oklahoma and it was sited in Cleveland County in 1993. According to OBIS there are no sightings of rufa red knot in Oklahoma. In addition, EBird.org has no record of sightings of piping plover or rufa red knot at its Grand Lake O' the Cherokees Recreation Observation Site nor its Grand Lake O' the Cherokees Off Road Observation Site and the two sites are the only observation sites in close proximity to the Project.</p> </div> <div data-bbox="1681 1427 2915 1814" data-label="Text"> <p>Finally, while providing this additional information requested by Commission staff, GRDA respectfully submits that staff incorrectly references “the potential for <i>proposed</i> project operation to alter the extent of exposed mudflats . . .” (emphasis added). To be clear, for purposes of the Commission’s obligations under ESA in this relicensing proceeding, GRDA’s operations at the Project relative to reservoir levels at Grand Lake once the current license expires should not be considered part of the “agency action” for purposes of consultation under ESA section 7. See 16 U.S.C. § 1536. ESA regulations define the term “action” as “all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas.” 50 C.F.R. § 402.02. In this case, Congress in NDAA 2020 section 7612(b)(2) removed authority for the Commission (and all other federal and state agencies) to regulate water surface elevations within Grand Lake’s conservation pool at Grand Lake. Thus, the Commission lacks authority to “authorize[], fund[], or carr[y] out” any measure relating to water surface elevations at Grand Lake as the ESA regulations require for purposes of defining the federal “action.”</p> </div>	Year	Days < 741.5 ft PD, Current Operations, Apr 1 - May 15	Days < 741.5 ft PD, Anticipated Operations, Apr 1 - May 15	Days < 741.5 ft PD, Current Operations, Aug 1 - Sep 15	Days < 741.5 ft PD, Anticipated Operations, Aug 1 - Sep 15	2004	0	0	0	0	2005	0	0	0	0	2006	0	0	0	0	2007	0	0	0	0	2008	0	0	0	0	2009	0	0	0	0	2010	0	0	0	0	2011	0	0	0	0	2012	0	0	0	3	2013	0	0	0	0	2014	0	0	0	0	2015	0	0	0	0	2016	0	0	0	0	2017	0	0	0	0	2018	0	0	0	0	2019	0	0	0	0
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#	Entity, Date	Comment	GRDA Response
			Nonetheless, GRDA recognizes the relevance of the information requested by Commission staff. GRDA’s anticipated Project operations relating to water surface elevations at Grand Lake during the new license term, while not part of the federal “action” for ESA purposes, information regarding piping plover and rufa red knot, and these species’ use of mudflats and sandbars associated with the Project during their migrations through the Project area, arguably address “consequences of other activities that are caused by the proposed action” (i.e., FERC’s issuance of a new license to GRDA). See 50 C.F.R. §§ 402.02, 402.17. Alternatively, GRDA’s anticipated operations relating to water surface elevations during the new license may be considered “cumulative effects,” as they are “effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation.” <i>Id.</i> § 402.02.
39	FERC 03/30/2023	Exhibit E-Threatened and Endangered Species <i>Section 3.7.2.2.4, Northern long-eared bat, of Exhibit E of the DLA discusses potential effects of proposed project operation on northern long-eared bat habitat. The DLA states that increased reservoir elevations associated with proposed project operation would inundate, on a non-continuous basis, 548 acres and could result in minor loss of trees. However, it is not clear how the analysis of potential tree loss resulting from increased inundation during the growing season was conducted, what quantity of tree loss is estimated to occur, or what criteria were used to determine that the level of tree loss would be minor. To ensure staff has sufficient information to conduct its environmental analysis of potential tree loss, please: (a) explain the methodology used to estimate the potential tree loss resulting from increased inundation during the growing season; (b) clarify the quantity of tree loss estimated to occur; and (c) explain the criteria used to determine that the level of tree loss would be minor.</i>	FLA Exhibit E, Section 3.7.2.2.4 has been updated to provide an explanation of the methodology used to estimate the potential tree loss resulting from increased inundation during the growing season, clarify the quantity of tree loss estimated to occur, and provide an explanation of the criteria used to determine that the level of tree loss would be minor. Although GRDA is providing this additional information as requested by Commission staff, GRDA continues to object to Commission staff’s use of the phrase “proposed project operation” when describing GRDA’s anticipated Project operations relating to Grand Lake water surface elevations during the new license term. As discussed in GRDA’s response to Comment #38, Project operations relating to Grand Lake reservoir levels are not part of the federal “action” for ESA section 7 purposes. Accordingly, the information sought by Commission staff in this comment related to Northern Long-eared bat is intended only to inform any consequences of the federal action.
40	FERC 03/30/2023	Exhibit E-Threatened and Endangered Species <i>Section 3.7.2.2.5, Tri-colored bat, of Exhibit E of the DLA discusses potential effects on tri-colored bat habitat and indicates that compared to existing operation, proposed project operation would result in the additional inundation of 265 acres and a 0.14-foot median increase in water surface elevation. However, in section 3.7.2.2.4, Northern long-eared bat, the DLA states that proposed changes in project operation would result in 548 acres of inundation and 0.54-foot change in water surface elevation. To ensure staff has sufficient information to conduct its environmental analysis of potential effects on the tri-colored bat, in the FLA, please explain why the acres of inundation habitat and the median increase in water surface elevation differ between section 3.7.2.2.5 and section 3.7.2.2.4 or adjust the acreage as needed for accuracy and consistency.</i>	FLA Exhibit E, Section 3.7.2.2.5 has been updated to assure the information in Section 3.7.2.2.5 and Section 3.7.2.2.4 is correct and as necessary explain any discrepancies. Although GRDA is providing this additional information as requested by Commission staff, GRDA continues to object to Commission staff’s use of the phrase “proposed changes in project operation” when describing GRDA’s anticipated Project operations relating to Grand Lake water surface elevations during the new license term. As discussed in GRDA’s response to Comment #38, Project operations relating to Grand Lake reservoir levels are not part of the federal “action” for ESA section 7 purposes. Accordingly, the information sought by Commission staff in this comment related to the tri-colored bat is intended only to inform any consequences of the federal action.
41	FERC 03/30/2023	Exhibit E-Recreation Resources <i>Section 3.8.3, Proposed Environmental Measures – Recreation Resources, of Exhibit E of the DLA states that GRDA proposes to develop a new recreation management plan (RMP) for the continued operation and maintenance of the five existing project recreation sites: Duck Creek Bridge Public Access Area; Seaplane Base Public Access; Monkey Island Public Boat Ramp; Big Hollow Public Access; and Wolf Creek Public Access. The DLA states that the RMP “will address all maintenance” at FERC-approved recreation sites and GRDA proposes to review and replace Part 8 signage as needed. The DLA, however, does not specify the additional maintenance that would be included (e.g., vegetation management, repairs, upgrades, considerations for the disabled), nor the frequency of maintenance activities. In addition, other than</i>	As requested by Commission staff, FLA Exhibit E, Section 3.8.3 has been updated to provide include the measures to be included in the RMP, and a discussion of the purpose of each measure as it relates to project effects. The estimated capital and annual costs for proposed measures are included within the RMP, along with the capital costs for developing and implementing the proposed RMP.

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		<i>maintenance, no other measures to be implemented in the plan are proposed, nor is a date for filing the proposed RMP with the Commission. It is also unclear whether vegetation management of recreation sites would be addressed in the Shoreline Management Plan (SMP) or RMP. Further, while a recreation use survey, site inventory, and site condition assessment are proposed for completion in year 25 after license issuance, there is no description of how recreation would be monitored and managed (with agency consultation) prior to year 25. To ensure staff has sufficient information to inform an environmental analysis of recreation maintenance and other measures, in the FLA please include: (a) the measures to be included in the RMP; (b) a discussion of the purpose of each measure as it relates to project effects; and (c) the estimated capital and annual costs for proposed measures included within the plan, and for developing and implementing the proposed RMP.</i>	
42	FERC 03/30/2023	Exhibit E-Recreation Resources <i>Section 3.8.1.3.5, Boat Ramp Elevation Data, and Appendix E-22 of Exhibit E of the DLA provide details about the boat ramp elevations and indicate that all ramps are useable at the lowest surveyed level of 742 feet PD. Those sections also state that nine of the 16 boat ramps are accessible during the highest surveyed water level of about 748 feet PD. However, the DLA does not discuss the upper and lower elevations at which each boat ramp would become unusable. Therefore, to ensure staff has sufficient information to inform an environmental analysis of the effect of lake levels on boat ramp access, in the FLA, please discuss the: (a) upper and lower elevations at which each boat ramp would be unusable; and (b) frequency that the boat ramps would be unusable during a median inflow year.</i>	As requested by Commission staff, FLA Exhibit E, Section 3.8.1.3.5 has been updated to include a discussion of the upper and lower elevations at which each boat ramp would be unusable and the frequency that the boat ramps would be unusable during a median inflow year. Although GRDA is providing this additional information as requested by Commission staff, GRDA emphasizes, as discussed in its response to Comment #22, that any effects to boat ramp access that may be attributable to changes in Project operations relating to water surface elevations at Grand Lake must be considered and evaluated only as indirect or cumulative effects of the proposed action.
FERC comments on cultural resources (Comment Nos. 34-37) and GRDA's responses are included in the separate Cultural Resources Comment and Response Table			
43	FERC 03/30/2023	Exhibit E-Cumulative Effects <i>Section 5.18(b)(2) of the Commission's regulations requires that an applicant's discussion of cumulative effects in the Affected Environment section of the FLA, include: (1) a brief discussion of past, present, and future actions, and their effects on resources based on the new license term (30-50 years); (2) the effect on the cumulatively affected resources from reasonably foreseeable future actions; and (3) a discussion of past actions' effects on the resource. The DLA did not include a discussion of the above mentioned items. To ensure that the FLA includes all required information on cumulative effects for review by Commission staff and stakeholders, and that staff has sufficient information to inform an environmental analysis, please include in the FLA, a full discussion of cumulative effects that includes items (1) through (3) above.</i>	Commission Staff's Scoping Document 2 issued for the relicensing of the Project (Accession No. 20180427-3008) identified the following issues for a cumulative effects analysis: <ul style="list-style-type: none"> • 4.2.1 Geology and Soils <ul style="list-style-type: none"> ○ Effects of project operation and maintenance on soil erosion and shoreline erosion. ○ Effects of project operations on sedimentation, including the transport and subsequent deposition of potentially contaminated sediment, within the project boundary. • 4.2.2 Water Resources <ul style="list-style-type: none"> ○ Effects of project operation for both power generation and flood control on water quantity, including its relationship to reservoir level, flooding upstream and downstream of Pensacola Dam, and drought/low flow periods. • 4.2.7 Land Use <ul style="list-style-type: none"> ○ Effects of project operations on tribal lands. • 4.2.8 Socioeconomic Resources <ul style="list-style-type: none"> ○ Effects project operation or maintenance on socioeconomic resources. • 4.2.9 Cultural Resources <ul style="list-style-type: none"> ○ Effects of the project operation and maintenance on historic and archeological resources within the APE that may be eligible for inclusion in the National Register.

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			<ul style="list-style-type: none"> ○ Effects of project operation and maintenance on properties of traditional religious and cultural importance to Indian tribes within the APE that may be eligible for inclusion in the National Register. <p>In accordance with SD 2, FLA Exhibit E Sections 3.3.3, 3.4.3, 3.9.3, 3.11.3 and 3.12.3 include a cumulative effects analysis on the resources identified above.</p>
44	FERC 03/30/2023	Exhibit F <i>An applicant must provide a supporting design report (SDR) that complies with section 4.41(g)(3) of the Commission's regulations, and demonstrates that existing and proposed structures are safe and adequate to fulfill their stated functions. No SDR report was filed with the DLA. Therefore, please provide the SDR in the FLA.</i>	After further discussion between GRDA and Commission Staff in the Washington D.C. Division of Dam Safety and Inspection Office, as part of the FLA in Exhibit F, GRDA, in addition to submitting current Exhibit F drawings, will be including a copy of the 11 th Part 12 Inspection Report. The drawing depicting the principal electric circuits is contained in Exhibit A-4 of the FLA.
45	FERC 03/30/2023	Exhibit G <i>Section 2.2.4, Proposed Project Boundary, of Exhibit E of the DLA states that GRDA proposes to adjust the existing project boundary to include all lands and waters required for project purposes. However, it is unclear where adjustments to the project boundary would occur. To help staff understand the location of GRDA's proposed adjustments to the project boundary, in the FLA, please provide maps showing the location of the proposed adjustments to the project boundary and explain why the adjustments are warranted. Further, to facilitate review of the effects to resources at the project, please submit, with the FLA, GIS shapefiles, including data layers showing the existing and proposed project boundaries.</i>	<p>FLA Exhibit E, Section 2.2.4 has been updated to explain why accuracy adjustments were made to the Project boundary.</p> <p>In addition, GRDA developed an additional set of maps included in an appendix to the FLA that demonstrates where accuracy adjustments would occur by showing the location of proposed adjustments. The GIS shapefiles are incorporated into the FLA filing.</p>
46	FERC 03/30/2023	Exhibit H <i>Section 5.18(c)(1)(i)(B)(2) of the Commission's regulations requires that an applicant provide a discussion of the increase in fuel, capital, and any other costs that would be incurred by the applicant or its customers to purchase or generate power necessary to replace the output of the licensed project if the applicant is not granted a license for the project. The above referenced information was not included in the DLA. Therefore, please provide the information required by section 5.18(c)(1)(i)(B)(2) in Exhibit H of the FLA.</i>	The information required by 18 CFR Section 5.18(c)(1)(i)(B)(2) has been incorporated into Exhibit H of the FLA.
47	FERC 03/30/2023	Exhibit H <i>Section 5.18(c)(1)(i)(B)(3) of the Commission's regulations requires that an applicant discuss the effect of each alternative source of power on: (i) the applicant's customers, including wholesale customers; (ii) the applicant's operating and load characteristics; and (iii) the communities served or to be served, including any reallocation of costs associated with the transfer of a license from the existing licensee. The above referenced information was not included in the DLA. Therefore, please provide the information required by section 5.18(c)(1)(i)(B)(3) in Exhibit H of the FLA.</i>	The information required by 18 CFR Section 5.18(c)(1)(i)(B)(3) has been incorporated into Exhibit H of the FLA.
48	FERC 03/30/2023	Exhibit H <i>Section 5.18(c)(1)(i)(C)(2) of the Commission's regulations requires that an applicant discuss the projected resources required by the applicant to meet the applicant's capacity and energy requirements over the short and long term including: (i) energy and capacity resources, including the contributions from the applicant's generation, purchases, and load modification measures (such as conservation, if considered as a resource), as separate components of the total resources required; (ii) a resource analysis, including a statement of system reserve margins to be maintained for energy and capacity; and (iii) if load management measures are not viewed as resources, the effects of such measures on the projected capacity and energy requirements indicated separately.</i>	The information required by 18 CFR Section 5.18(c)(1)(i)(C)(2) regarding the application's capacity and energy requirements over the short and long term has been incorporated into Exhibit H of the FLA.

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49	FERC 03/30/2023	Exhibit H <i>In addition, section 5.18(c)(1)(i)(C)(2) requires that for alternative sources of power; including generation of additional power at existing facilities, restarting deactivated units, the purchase of power off-system, the construction or purchase and operation of a new power plant, and load management measures such as conservation; the applicant include: (i) the total annual cost of each alternative source of power to replace project power; the basis for the determination of projected annual cost; and (ii) a discussion of the relative merits of each alternative; including the issues of the period of availability and dependability of purchased power, average life of alternatives, relative equivalent availability of generating alternatives, and relative impacts on the applicant's power system reliability and other system operating characteristics; and the effect on the direct providers (and their immediate customers) of alternate sources of power. The above referenced information was not included in the DLA. Therefore, please provide the information required by section 5.18(c)(1)(i)(C)(2) in Exhibit H of the FLA.</i>	The information required by 18 CFR Section 5.18(c)(1)(i)(C)(2) regarding information for alternative sources of power; including generation of additional power at existing facilities, restarting deactivated units, the purchase of power off-system, the construction or purchase and operation of a new power plant, and load management measures has been incorporated into Exhibit H of the FLA.
50	FERC 03/30/2023	Exhibit H <i>Section 5.18(c)(1)(ii)(B)(2) of the Commission's regulations requires that an applicant discuss any warning devices used to ensure downstream public safety. This information was not included in the DLA. Therefore, please provide the information required by section 5.18(c)(1)(ii)(B)(2) in Exhibit H of the FLA.</i>	The information required by 18 CFR Section 5.18(c)(1)(ii)(B)(2) has been incorporated into Exhibit H of the FLA.
51	FERC 03/30/2023	Exhibit H <i>Section 5.18(c)(1)(ii)(B)(4) of the Commission's regulations requires that an applicant provide a description of existing and planned monitoring devices to detect structural movement or stress, seepage, uplift, equipment failure, or water conduit failure; including a description of the maintenance and monitoring programs used or planned in conjunction with the devices. The above referenced information was not included in the DLA. Therefore, please provide the information required by section 5.18(c)(1)(ii)(B)(4) in Exhibit H of the FLA.</i>	The information required by 18 CFR Section 5.18(c)(1)(ii)(B)(4) has been incorporated into Exhibit H of the FLA.
52	BIA 3/31/2023	<i>Please be advised that Bill Follis passed away in 2022 and is no longer the Chief of the Modoc Nation. Accordingly, the BIA recommends that GRDA remove his name.</i>	GRDA has made the requested change.
53	BIA 3/31/2023	<i>Only one of the three Muscogee (Creek) Tribal Towns, the Alabama-Quassarte Tribal Town, is included as an Indian tribe that may be affected by the project. The BIA recommends that the GRDA, if it has not done so, also consider whether the Kialegee Tribal Town and the Thlopthlocco Tribal Town may be affected by the Project; and if appropriate, to add them. Further, the BIA recommends that notice be sent to these Tribal Towns if GRDA decides to include them in the list of potentially affected tribes.</i>	As the Commission's non-federal representative for purposes of section 106 of the National Historic Preservation Act, GRDA has communicated and sought to engage in informal consultation with all Native American Tribes identified by the Commission at the outset of the relicensing process. See Accession Nos. 20170215-3060, 20170824-3028, 20171031-3045, 20180119-3002, 20180622-3037, 20180810-3059. Should the Commission determine that these other Tribal Towns identified by BIA should be included in the relicensing process going forward, GRDA will reach out to these additional Tribal Towns, as may be directed by Commission staff.
54	BIA 3/31/2023	<i>Pursuant to our request, the GRDA has provided the BIA additional data regarding the shapefiles for the maps GRDA put together. However, please be advised that information and data is still under review with the BIA, as well. To complete this comparison request, the BIA requests that GRDA please provide the coordinate projection used for their process. As for the parcels created by the BIA, we note that NAD 83 UTM zone 14 was used. For comparison with the shapefiles and maps GRDA provided, the BIA would need to project both PLSS grids and the tracts. When working on Nationwide datasets, UTM makes everything look even. Accordingly, the BIA would appreciate knowing what CAD version GRDA is using for the mapped tracts. The CadNSDI (PLSS) files were used to produce the maps provided from BIA to GRDA for the project. The PLSS files used by the BIA were 2014-2016 versions.</i>	GRDA has continued its consultation with the BIA to resolve the mapping inaccuracies in pursuit of a final acreage total of federal lands within the Project boundary. Consultation is ongoing and the final results of the consultation will be filed with the Commission. The consultation effort is further discussed in the FLA Exhibit A, Appendix A-5. Documentation of Consultation with the BIA as of the development of the FLA is available in the FLA Appendix X-3. In preparing the maps and GIS shapefiles for the Exhibit G drawings and other mapping efforts in this relicensing process, GRDA has followed the Commission's <i>Managing Hydropower Project Exhibits Guidance Document</i> (2014), available at https://www.ferc.gov/sites/default/files/2020-04/drawings-guide.pdf . The map projection, map datum, and the units of measurement used in GRDA's GIS files meet the requirements of FERC's <i>Guidance Document</i> . GRDA understands that BIA may have different

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		<i>From an initial GIS review, it appears that GRDA is using a mapping system that might not be in compliance with the standards and policies of the BIA. The reasoning behind using UTM zones rather than state plane projection is to account for stretch and distortion over a vast area. The BIA uses the parcels for parcelization process, which is derived from the Official Bureau of Indian Affairs, Office of Trust Services Division of Land Titles and Records, Branch of Geospatial Support, Indian Land Tract and Land Area Boundary Mapping Training Guide. The policy requires that UTM projection be used for mapping of the Lower 48 states. This projection is utilized for its ability to stretch in other areas to cover distortion. This projection accommodates situations where a reservation stretches into other states. A state plane projection can be more detailed and show minimal distortion on parcels. When BIA maps, it is intentionally mapped for whatever UTM zone the tracts are in.</i>	<p>preferences and standards than the Commission but is confident that BIA can use the data provided by GRDA to convert it for BIA’s use, as needed.</p> <p>GRDA is using map data projected in NAD_1983_StatePlane_Oklahoma_North_FIPS_3501_Feet as this is more specific to the Project area. Per Commission regulations, project boundary data submitted is project-specific and must be documented in metadata provided. BIA tract and other parcel data are not submitted to the Commission.</p>
55	BIA 3/31/2023	Exhibit E <i>We note that GRDA’s discussion of the effect of an amendment to the National Defense Authorization Act (NDAA) of 2020, may be premature. This legislation is currently the subject of litigation in federal court in the District of Columbia. The D.C. Circuit remanded the matter to the Commission to interpret the amendment to the NDAA and notes that it was “unclear . . . whether the amendment strips FERC of authority . . . to impose new conditions on future licenses ” City of Miami, Okla. v. FERC, 22 F.4th 1039, 1043-44 (D.C. Cir. 2022).</i>	<p>GRDA recognizes that the Commission has yet to issue its remand order following <i>City of Miami v. FERC</i>, 22 4th 1039 (D.C. Cir. 2022). However, the plain language of NDAA 2020 establishes that:</p> <ol style="list-style-type: none"> 1. The Secretary of the Interior lacks authority to condition the Project under section 4(e) of the Federal Power Act (FPA) (NDAA 2020 § 7612(b)(1)); 2. No federal or state agency is empowered to impose any license condition or other requirement relating to surface elevations of Grand Lake, except with regard to complying with the Secretary of the Army’s flood control responsibilities under section 7 of the Flood Control Act of 1944 (33 U.S.C. § 709). Moreover, the Project remains subject to the Commission’s rules and regulations for project safety and protection of human health (NDAA 2020 § 7612(b)(2)); 3. The Commission’s licensing jurisdiction over the Project does not extend to any land or water outside the Project boundary, as the Project boundary existed on the December 20, 2019 enactment of NDAA 2020 (NDAA 2020 § 7612(b)(3)(A)); 4. All land and water located outside the Project boundary, as the Project boundary existed on the date of enactment, shall not be considered part of the Project (NDAA 2020 § 7612(b)(3)(B)); 5. GRDA written consent is required for any change to the Project boundary following the date of enactment (NDAA 2020 § 7612(b)(3)(C)); and <p>The Secretary of the Army has exclusive jurisdiction and responsibility for management of the flood pool for flood control operations at the Project (NDAA 2020 § 7612(c)).</p> <p>These plain-language requirements and limitations established by NDAA 2020 must guide the Commission’s decision making in this relicensing proceeding.</p>
56	BIA 3/31/2023	Exhibit E <i>To the best of our knowledge, the Commission has yet to explain the effect of the NDAA on the ability to impose conditions on the new license pursuant to Section 4(e) (or other provisions) of the Federal Power Act, 16 U.S.C. § 797(e), and whether and how federal resource agencies like the BIA (as well as the Fish and Wildlife Service) will be able to potentially impose such conditions in the event that the amendment to the NDAA is construed differently by the Commission (or a federal court) than GRDA. The BIA urges that the circumstances surrounding the interpretation of the amendment to the NDAA are extraordinary and constitute good cause for requesting clarity on the process for how conditions will be either proposed by the Commission or included in the final license.</i>	<p>As noted in GRDA’s response to Comment #55, the plain language of NDAA 2020 § 7612(b)(1) removes any authority of the Secretary of the Interior to impose mandatory license conditions under FPA section 4(e). BIA has not offered any alternative interpretation of this statute. In the event that BIA chooses to ignore Congress’ plain direction and submit FPA section 4(e) conditions despite the clear prohibition under NDAA ¶ 7612(b)(1), GRDA would expect FERC to declare all such conditions to be unenforceable, as it has done in other relicensing proceedings. <i>See, e.g., Warm Springs Hydro LLC</i>, 174 FERC ¶ 61,218, at P 31 (2021); <i>Placer County Water Agency</i>, 171 FERC ¶ 62,118 , at P 66 (2020). Unquestionably, GRDA would have the right to challenge any such violation of NDAA 2020 § 7612(b)(1) following FERC’s relicensing order, as provided by the FPA. <i>See</i> 16 U.S.C. § 825l.</p> <p>In addition, GRDA does not agree with BIA’s characterization of this provision in NDAA 2020 as “extraordinary.” Congress has previously removed FPA section 4(e) authority at other FERC-licensed</p>

#	Entity, Date	Comment	GRDA Response
			projects. <i>See, e.g.</i> , Carl Levin and Howard P. “Buck” McKeon National Defense Authorization Act for Fiscal Year 2015 § 3088, Pub. L. No. 113-291 (2014) (NDAA 2014).
57	BIA 3/31/2023	<p>Exhibit E – Section 1.3.8 <i>The BIA disagrees with GRDA’s characterization of the amendment to the NDAA of 2020 in the following respect:</i></p> <p>1. <i>That the amendment prohibits the Commission from imposing any license obligation outside of the Project boundary as it existed as of Congress’ enactment of NDAA 2020. The BIA respectfully submits that the amendment does not so state. Rather, the definition of the project boundary itself is part of the relicensing process (i.e., Exhibit G) and the NDAA amendment does not preclude the Commission from requiring a project boundary different from that in the prior license.</i></p> <p>2. <i>The GRDA makes representations about whether it is or is not required to obtain additional acreage identified by the City of Miami. The BIA respectfully submits that this has been an issue litigated in federal court and it remains an open question whether the NDAA amendment “strips FERC of authority to enforce the existing license or that FERC’s authority to impose new conditions on future licenses is limited.” City of Miami, Okla. v. FERC, 22 F.4th 1039, 1043-44 (D.C. Cir. 2022).</i></p> <p>3. <i>The GRDA says the Project boundary can only be amended with its written permission. GRDA interprets this to mean that no new project boundary may be proposed in the relicensing without its consent. However, an alternative interpretation of the NDAA amendment that the Commission may adopt is that once a new project boundary is established in the new license, the Commission may not thereafter amend the Project boundary without GRDA’s consent. In other words, it is not clear that the NDAA amendment prevents the Commission from establishing a new Project boundary when granting the new license unless GRDA consents.</i></p>	<p>1. GRDA recognizes that NDAA 2020 § 7612 does not indicate that this provision became effective on December 19, 2020—the date in which NDAA 2020 § 7612 was enacted. In fact, NDAA 2020 § 7612 is silent on the issue of when this section becomes effective. In these circumstances, long-standing Supreme Court precedent dictates that absent an express provision in the statute dictates otherwise, the statute becomes effective upon the date of its enactment. <i>Gozlon-Peretz v. United States</i>, 498 U.S. 395 (1991); <i>Lapeyre v. United States</i>, 84 U.S. 191, 198 (1872); <i>United States v. Begay</i>, 133 F.3d 933 (10th Cir. 1998); <i>Bradshaw v. Story</i>, 86 F.3d 164, 166 (10th Cir. 1996). Under this well-established precedent, NDAA 2020 § 7612 became effective on December 19, 2020—the date of its enactment.</p> <p>For this reason, GRDA respectfully disagrees with BIA’s statement that NDAA 2020 § 7612 “does not preclude the Commission from requiring a project boundary different from that in the prior license.” To the contrary:</p> <ol style="list-style-type: none"> As of December 20, 2019, the Commission lacks any authority to extend its licensing jurisdiction to any land or water outside the Project boundary, as the boundary existed on the date of enactment. <i>See</i> NDAA 2020 § 7612(b)(3)(A). As of December 20, 2019, all land and water outside the boundary as it existed on the date of enactment “shall not be considered to be part of the project.” NDAA 2020 § 7612(b)(3)(B). As of December 20, 2019, the Commission lacks any authority to unilaterally impose any change to the Project boundary; rather, any change must be agreed to by GRDA in writing. <i>See</i> NDAA 2020 § 7612(b)(3)(C). <p>2. GRDA’s consistent position in the City of Miami’s complaint proceeding is that FERC has never determined that the approximately 13,000 acres at issue in that case are necessary or appropriate for Project purposes. Therefore, GRDA cannot possibly be held to be in violation of a license obligation that FERC has never imposed. Moreover, because FERC has never determined that the approximately 13,000 acres in dispute are necessary and appropriate for the Project, the NDAA does not strip the Commission of any enforcement authority, as averred by BIA.</p> <p>3. BIA’s “alternative interpretation” that NDAA 2020 § 7612 will not become effective until the Commission adopts a new Project boundary “in the new license” is inconsistent with 150 years of Supreme Court precedent. As explained above, unless NDAA 2020 expressly provides otherwise, § 7612 became effective upon its enactment on December 20, 2019. And while Congress in NDAA 2020 expressly provided and express effective date for several other provisions in the statute, <i>see</i> NDAA 2020 §§ 512, 5324, 6202, the fact that it did not impose a specific effective date for § 7612 is further indication that the default rule—effective as of the date of enactment—must apply.</p> <p>Moreover, there is no support in the plain language of § 7612 for BIA’s argument that Congress intended to make this provision effective only following the Commission’s relicensing. As BIA itself recognizes, Congress was silent on this issue.</p>

#	Entity, Date	Comment	GRDA Response
58	BIA 3/31/2023	<p>Exhibit G <i>The BIA reserves comment on the Project boundary until resolution of issues identified in the Commission’s March 14, 2023, Determination on Requests for Study Modifications and New Studies (Determination). The Commission provided that GRDA is to complete additional runs of its Hydrologic and Hydraulic (H&H) Modeling Study and use these results to respond to the Commission’s Determination. GRDA has since requested an additional 100 days to respond to the Determination such that GRDA’s responses will be due on or before July 24, 2023. GRDA has previously suggested that the results of the H&H model mean that no additional lands are needed to be included in the Project boundary. The BIA thus reserves comment on the Project Boundary until the H&H Model is finalized.</i></p>	<p>While GRDA recognizes that BIA may wish to comment on issues pertaining to Project lands once GRDA provides the additional information requested by Commission staff, nothing in that submission will affect the legal requirements and limitations imposed by NDAA 2020 § 7612, as stated in GRDA’s responses to Comments #55 and 57.</p>
59	Miami Tribe of Oklahoma 03/30/2023	<p>Definition of Project <i>The FPA definition of “project” includes “all . . . lands, or interest in lands the use and occupancy of which are necessary or appropriate in the maintenance or operation of” the complete unit of development that includes the dam and reservoir. Nevertheless, the DLA does not observe this statutory definition when defining the project boundary, limiting impacts of operations only to those GRDA defines as its responsibility, and attempting to off load flood impacts to the USACE despite the fact that flood control is a licensed purpose of the Project.</i></p>	<p>With respect, for the following reasons, GRDA is not “attempting to off load flood impacts to the USACE,” as averred by the Miami Tribe:</p> <ol style="list-style-type: none"> 1. The Miami Tribe is correct that section 3(11) of the FPA defines the Project as including “all . . . lands, or interest in lands the use and occupancy of which are necessary or appropriate in the maintenance and operation of” the complete unit of development. 16 U.S.C. § 796(11). In this relicensing effort, however, GRDA has conducted numerous studies and modeling analyses that have been developed under intense review and scrutiny by Commission staff and all relicensing participants over the past 5 years. After years of this peer review, these models and studies demonstrate that flooding along the Neosho River, Spring River, Elk River, and Tar Creek is not attributable to Project operations—but rather by natural events. Consistent with these scientific conclusions, a Ph.D.-level historical report that has been attached to the FLA demonstrates that significant and regular flooding events have been documented for as long as the historical record in this basin exists—and long before the construction of the Project. Thus, lands that are currently outside the Project boundary—including the approximately 13,000 acres at issue in the City of Miami’s complaint proceeding—are demonstrably <i>not</i> necessary or appropriate for the Project. 2. Congress—not GRDA—has consistently delegated the Secretary of the Army, through the U.S. Army Corps of Engineers (USACE) with exclusive responsibilities for flood control at the Project. The Flood Control Acts of 1938, 1941, and 1944 all require USACE to obtain and retain sufficient property rights for flood control, and to develop and implement flood control operations at the Project. And when issues have arisen regarding the sufficiency of USACE’s flood control operations and property rights, Congress has responded by directing USACE—not GRDA—to address these issues. <i>E.g.</i>, Pub. L. No. 100-202 (1987); Pub. L. No. 106-541 (2000). There can be no serious argument against the conclusion that Congress has delegated exclusive flood control responsibility at the Project to USACE. Even the Commission has recognized this, stating: “[T]he Grand Lake flood pool . . . is controlled by the Corps for flood control storage, as mandated by the Flood Control Act of 1944, and not subject to Commission authority Under flood conditions.” <i>Grand River Dam Auth.</i>, 59 FERC ¶ 62,073, at p. 63,247 (1992). 3. When the Miami Tribe and other relicensing participants began to raise questions in this very relicensing effort regarding the ability of the Commission to address flood control, Congress again stepped in, and under NDAA 2020 confirmed USACE’s exclusive authority over flood control at the Project by: <ol style="list-style-type: none"> a. Prohibiting any federal or state agency from imposing any license condition or other requirement relating to surface elevations of Grand Lake, except with regard to complying with the Secretary of the Army’s flood control responsibilities under section 7 of the Flood

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			<p>Control Act of 1944 (33 U.S.C. § 709)—although the Project will remain subject to the Commission’s rules and regulations for project safety and protection of human health (NDAA 2020 § 7612(b)(2));</p> <p>b. Confining the Commission’s licensing jurisdiction over the Project to land or water inside the Project boundary, as the Project boundary existed on the December 20, 2019 enactment of NDAA 2020 (NDAA 2020 § 7612(b)(3)(A));</p> <p>c. Requiring that all land and water located outside the Project boundary, as the Project boundary existed on the date of enactment, shall not be considered part of the Project (NDAA 2020 § 7612(b)(3)(B));</p> <p>d. Establishing that GRDA written consent is required for any change to the Project boundary following the date of enactment (NDAA 2020 § 7612(b)(3)(C)); and</p> <p>e. Conferring exclusive jurisdiction upon the Secretary of the Army for management of the flood pool for flood control operations at the Project (NDAA 2020 § 7612(c)).</p> <p>For these reasons, GRDA disagrees with the Miami Tribe’s assertion that the DLA did not adhere to the requirements of FPA section 3(11). To the contrary, the Project described in the DLA (and now the FLA) is fully compliant with all federal laws pertaining to the Project, the historical record, and the extensive scientific and technical record that has been developed over many years in this relicensing effort.</p>
60	Miami Tribe of Oklahoma 03/30/2023	UHM Analysis <i>The Tribe joins in the March 30, 2023 Comments of the City of Miami regarding the Upstream Hydraulic Modeling Analysis provided by GRDA in support of its DLA.</i>	Please see GRDA’s responses to Comments #72-74 and 81, below.
61	Miami Tribe of Oklahoma 03/30/2023	Sedimentation <i>The Tribe joins in the March 30, 2023 Comments of the City of Miami regarding the Sedimentation Study provided by GRDA in support of its DLA.</i>	Please see GRDA’s responses to Comments #82-93 and 94-98, below.
62	Miami Tribe of Oklahoma 03/30/2023	1940 Act <i>The plain language of the 1940 Act does two things: authorizes the acquisition of Indian land from the United States, and establishes requirements for that acquisition including that the consent of the Tribes be obtained, that the land be identified with particularity on a map to be prepared by DOI, and that compensation be paid in an amount to be established by the Secretary. What the statute did not do, is abrogate (“disestablish” in the inapposite vernacular of GRDA) tribal treaty rights, much less even mention such rights.</i> <i>The distinction between the status of reservations and the disposition of title within such a reservation has been repeatedly recognized by the courts. Courts will employ a presumption in favor of the continued existence of a reservation, and diminishment will not, therefore, be lightly inferred. All lands within the boundaries of an Indian reservation constitute Indian country, regardless of the status of title. The Project is located within the reservation boundaries of several tribes and those boundaries were established by treaty and nothing in the 1940 Act affects those reservations. That GRDA chose to characterize the 1940 Act as disestablishing tribes’ treaty rights perhaps best demonstrates the attention that FERC should pay to the implications of the Project operating within the reservations of several of the Tribes of Northeast Oklahoma.</i>	<p>With respect, GRDA maintains its view that the 1940 Act diminished any previously established reservation that existed in the Project area below elevation 750 feet. In the 1940 Act, Congress explicitly:</p> <p>“[G]ranted to the Grand River Dam Authority, a public corporation of the State of Oklahoma, all right, title, and interest held by the United States and individual Indians and the tribes of Indians in Indian lands located in Ottawa, Delaware, Craig, and Mayes Counties, Oklahoma, lying below an elevation of seven hundred and fifty feet above mean sea level, which may be required for the Grand River Dam Reservoir”</p> <p>Pub. L. No. 76-597 (1940). While the Miami Tribe attempts to brush aside the authority granted by Congress in this statute by stating that “[a]ll lands within the boundaries of an Indian reservation constitute Indian country, regardless of the status of title,” in this case there is clear language in the statute that Congress intended “the present and total surrender of all tribal interests” in the Project area below elevation 750 feet. <i>Nebraska v. Parker</i>, 577 U.S. 481, 488 (2016) (quoting <i>Solem v. Bartlett</i>, 465 U.S. 463, 470 (1984)). Indeed, Congress not only granted all property rights owned by the United States as trustee, as well as all property rights of Indian tribes and individual tribal members, it also conveyed all rights “which may be required for the Grand River Dam Reservoir”—i.e., the Project. Thus, the 1940 Act facilitated the Commission’s plenary control over the Project area under the requirements of the FPA, as the Project had been originally licensed just the year before enactment of the 1940 Act.</p>

#	Entity, Date	Comment	GRDA Response
		<p><i>“In 1940, the time in which GRDA was acquiring lands to construct the newly licensed Project, Congress passed Public Law 76-597, 54 Stat. 303, “To transfer certain Indian lands to the GRDA.” Public Law 76-597 expressly grants to GRDA “all the right title, and interest held by the U.S. and by Individual Indians and tribes of Indians in Indian lands located in Ottawa, Delaware, Craig, and Mayes counties...lying below an elevation of seven hundred and fifty feet above mean sea level.”</i></p> <p><i>As indicated, the plain language of the 1940 Act established requirements for the acquisition of Indian land that it authorized. Specifically, that the consent of the tribes be obtained, that the land be identified “with particularity” on a map to be prepared by the Secretary of the Interior, and that compensation be paid for the benefit of the tribes in an amount to be established by the Secretary. Ultimately, if the tribes or individual tribal member beneficial owners did not consent, condemnation proceedings naming the United States and the Indians were authorized. So, the 1940 Act is not evidence of title, as GRDA would have FERC believe. Rather, title must be acquired by consent of the tribes, a map identifying with particularity the parcels acquired, and evidence of compensation paid and received. Or, in the alternative, an order of condemnation and payment of fair market value.</i></p> <p><i>The Tribe has not seen any evidence that GRDA has taken any of these steps in these proceedings, despite the many years that the Tribe has questioned the status of GRDA’s ownership of lands affected by the Project.</i></p>	<p>Regardless of this dispute of diminishment between GRDA and the Miami Tribe, the Commission need not resolve this matter as part of this relicensing effort. There is no question that the Commission is authorized under the FPA to license and regulate hydropower facilities within Indian Country—just as it does any other jurisdictional project across the U.S. The Commission has granted licenses for numerous projects in Indian Country. <i>E.g., Mont. Power Co., 32 FERC ¶ 61,070 (1985); Pub. Util. Dist. No. 1 of Pend Oreille County, 112 FERC ¶ 61,055 (2005); Portland Gen. Elec. Co., 111 FERC ¶ 61,450 (2005).</i></p> <p>Rather, the issue raised by the Miami Tribe’s comment simply relates to the question raised by Commission staff in its November 29, 2002 Comments on the Updated Study Report for the Pensacola Hydroelectric Project. Accession No. 20221129-3045. In these comments, Commission staff (on pages A-9 to A-10) stated:</p> <p>“Federal trust responsibilities include legal requirements to protect Tribal treaty rights, lands, assets, and resources, as well as requirements to implement the mandates of federal law regarding American Indian and Alaska Native Tribes and villages. Tribal trust resources include rights, property, assets, or interests protected by treaties, statutes, and executive orders. Tribes may have reserved rights to use resources, such as water and fish, and those rights are protected. The federal government has a trust responsibility to ensure that Tribal fishing and water rights, as determined by treaties, court actions, or other federal decisions, are not diminished. Several participating Tribes hold lands within the Pensacola Project boundary.</p> <p>“While GRDA’s ethnographic report (Battaglia and Hawkins, 2022) mentions several Treaties between the Federal government and the Tribes of Oklahoma, the extent to which these Treaties provide any legal Tribal rights to lands, waters, or other resources within the project boundary is unclear. By December 29, 2022, please provide a summary of any existing legal rights that the participating Tribes may have to resources within the project boundary.”</p> <p>In its December 29, 2022 Response to Comments on Updated Study Report, Accession No. 20221229-5237, GRDA reported (on page 125):</p> <p>“GRDA is not aware of any ‘legal Tribal rights to lands, waters, or other resources within the project boundary,’ as requested by Commission staff. During the extensive consultation that has transpired in this relicensing process—which has been ongoing for nearly 5 years—no Native American Tribe has ever asserted any treaty right to any natural resources in the Project Boundary.”</p> <p>GRDA’s comment remains accurate today. Despite its vigorous objection to GRDA’s view regarding diminishment based on the 1940 Act, the Miami Tribe has not provided any information demonstrating the presence of any existing legal rights that it may have within the Project boundary related to natural resources, such as off-reservation hunting or fishing rights at usual and accustomed places, reserved water rights, or other rights to natural resources provided by treaty. In fact, the Miami Tribe’s comment references “tribal treaty rights,” but it provides no evidence that any rights exist—much less the natural resources-related rights requested by Commission staff.</p> <p>Finally, the Miami Tribe mistakenly states that it “has not seen any evidence that GRDA has taken any of these steps [regarding compliance with the 1940 Act].” This information appears in the <i>Grand River Dam Authority Land Analysis</i>, which appears in DLA, Exhibit A, Appendix A-5, and which appears at this same location in the FLA. The <i>Land Analysis</i> reports on GRDA’s efforts to conduct a title search for every parcel</p>

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			<p>that BIA identified within the Project boundary that is owned in trust by the United States. The <i>Land Analysis</i> contains title opinions for all parcels at issue, which establish that: (1) numerous parcels were acquired pursuant to the 1940 Act; and (2) only approximately 8 acres of federal trust land are located within the Project boundary.</p> <p>Upon request of the Miami Tribe, GRDA will make the abstracts to these title opinions available for review and reproduction. Because these abstracts are thousands of pages in length, they have not been included in this FLA.</p>
63	Miami Tribe of Oklahoma 03/30/2023	<p>1940 Act <i>“GRDA is not aware of any “legal Tribal rights to lands, waters, or other resources within the project boundary,” as requested by Commission staff. During the extensive consultation that has transpired in this relicensing process—which has been ongoing for nearly 5 years—no Native American Tribe has ever asserted any treaty right to any natural resources in the Project Boundary.”</i> <i>This statement is jaw dropping in its audacity. In fact, several tribes have been engaged in this proceeding from the start as well as the proceedings involving GRDA’s requests for rule curve increases. Throughout the proceedings, the tribes have asserted that:</i></p> <ol style="list-style-type: none"> <i>1) there are Indian lands within the existing Project Boundary;</i> <i>2) that the current Project Boundary is inadequate to account for all project operations; and</i> <i>3) that if it were amended to properly reflect those operations significant additional acreage of Indian lands would be therewithin.</i> <p><i>The Tribe persisted in its arguments, even though GRDA had baldly asserted, and FERC had blithely accepted the assertion for 70 years that no Indian lands were located within the current Project Boundary.</i></p> <p><i>During the Study Plan Phase of the Pre-Application process, the Tribe requested a real estate study for all lands included in the Project Boundary. The request was intended to address the absence of any evidence regarding title to lands in the Project Boundary and the opportunity it created for the licensee to fill that void with bald assertions rather than fact-based statements. In short, the tribes requested a full real estate study because they had seen no evidence that the lands authorized to be acquired 1) were acquired with the consent of the tribes, 2) were depicted with particularity on a map prepared by the Secretary of the Interior, or 3) that compensation had been paid to DOI for the benefit of the tribes.</i></p> <p><i>FERC’s Study Plan Determination rejected the request for a study of federal and tribal lands implicated by the proposed Project Boundary for the new license. In explaining its decision to deny the study, FERC indicated that GRDA would be required to submit relevant land information with or without a study:</i></p> <p><i>As the Commission’s regulations require, in its final license application, GRDA must provide exhibit G maps that show a project boundary enclosing all project works and lands necessary for operation and maintenance of the project and other project purposes including recreation, shoreline control, and protection of environmental resources (see 18 C.F.R section 4.41(h)(2)). Further, the Commission’s regulations require that GRDA provide an exhibit A that describes all lands of the United States that are enclosed within the project boundary, identified and tabulated by legal subdivisions of a public land survey of the affected area or, in the absence of a public land survey, by</i></p>	<p>With respect, Commission staff posed a very specific question to GRDA regarding the presence of any treaty-established rights to natural resources that may be applicable to the Project area. <i>See</i> Accession No. 20221129-3045 (pages A-9 to A-10). Thus:</p> <ol style="list-style-type: none"> 1. The Miami Tribe is correct that approximately 8 acres of federal trust lands are located within the existing Project boundary—which GRDA acknowledged in DLA, Exhibit A, Appendix A-5. While GRDA has continued to work with BIA in refining the <i>Grand River Dam Authority Land Analysis</i> since filing the DLA, the acreage of federal trust land in the existing Project boundary is not expected to materially change in the FLA. 2. The current Project boundary is not inadequate, and in fact has been endorsed by Congress under NDAA 2020 § 7612. Please see GRDA’s responses to Comments #55, 57, and 59. 3. Both scientific studies and legal requirements demonstrate that the Project boundary—which has been largely undisturbed since the Federal Power Commission issued the Project’s original license in 1939—is properly placed, and that no changes are warranted. Please see GRDA’s responses to Comments #55, 57, and 59. <p>Finally, Miami Tribe wrongfully claims in its comment that GRDA did not conduct the analysis of federal lands mentioned by FERC in its Study Plan Determination. As noted in GRDA’s response to Comment #62, this information was included in DLA, Exhibit Appendix A-5, and appears in the FLA at the same location.</p>

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		<p><i>the best available legal description (see 18 C.F.R. section 4.51(b)(6)). As identified in Scoping Document 2 in a filing of April 11, 2017, BIA provided documentation that lands held in trust by the BIA, for the benefit of one or more federally recognized Indian tribes, occur within the existing Pensacola Project boundary. The results of the studies conducted during relicensing, stakeholder recommendations for PM&Es, and Commission staff's analysis of the effects of the project on environmental and cultural resources will inform the need to make modifications to the project boundary, including enclosing additional federal lands, if needed. Using this information, the Commission staff will determine the adequacy of GRDA's proposed project boundary upon review of the draft license application and again after a final application is filed for the project. Further, should the Commission require modifications to GRDA's proposed project boundary as a license condition, GRDA would be required to file revised maps after a license is issued for the project. Because these requirements exist as part of the licensing process and the studies approved in this determination will provide the necessary information for our reviews, we do not recommend that GRDA conduct a separate study of the need to modify the project boundary or to document the presence of federal lands (section 5.9(b)(4)).</i></p> <p><i>FERC never revisited this decision. And now, five years later, FERC has received a DLA that does not depict tribal lands within the Project Boundary and, in response to FERC's November 29, 2022 request for additional information on its Study Report.</i></p>	
64	Miami Tribe of Oklahoma 03/30/2023	<p>1940 Act <i>GRDA's statement that it is not aware of any tribal rights to lands or other resources is audacious, but not surprising. It is certainly time for FERC to get to the bottom of whether any lands were acquired consistent with the statutory requirements imposed by the 1940 Act.</i></p>	The Miami Tribe's comment misapprehends GRDA's prior statements. Please see GRDA's response to Comments #62-63.
65	Miami Tribe of Oklahoma 03/30/2023	<p>Area of Potential Effect <i>The Tribe joins in the concerns asserted in earlier filings by the Quapaw Nation and others that the Area of Potential Effects is inadequate under applicable law. The cultural resource work ordered by FERC was undertaken in an inflexible and perfunctory manner. As stated in the recent filing of the Quapaw Nation, GRDA talks of flexibility in determining the appropriate APE, but its actions do not match its words. Box-checking 106 review is not what the National Historic Preservation Act intends or, the Tribe is certain, what FERC expected. But that is what has occurred here and now, the parties find themselves five years later having to ask FERC to direct that these efforts be undertaken earnestly, rather than arrogantly, as has been the case heretofore.</i></p> <p><i>This analysis, too, awaits direction from the Commission on the order and remand from the D.C. Circuit. The Tribe joins the comments of the United States Department of the Interior, Bureau of Indian Affairs, that an APE cannot be fairly assessed until the Commission resolves the effect of the NDAA which GRDA offers as its panacea, and the tribes and the BIA find dubious:</i></p> <p><i>Section 4.7.1 (page 46 of the USR) - GRDA's assertion that the APE does not require modification, see USR at 46, is premised on its interpretation of the NDAA 2020, which, as explained above, has not yet been interpreted by the Commission.</i></p> <p><i>The APE must include "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist." The APE, in turn, defines the geographic limits within which FERC must conduct its survey of historic and</i></p>	<p>GRDA strongly disagrees with the Miami Tribe's unfortunate characterization that the cultural resources work has been undertaken in an "inflexible and perfunctory manner." To the contrary, GRDA has spent over three years—much longer than other FERC relicensing efforts—working very closely with participants in the Cultural Resources Working Group (CRWG) to carry out an ambitious and thorough study of cultural resources within the Project's Area of Potential Effect (APE)—including archaeological resources, the built environment, and Traditional Cultural Properties (TCPs). To carry out this effort, GRDA has held quarterly meetings with the CRWG, and tribal monitors have participated in all fieldwork. While GRDA does not understand why the Miami Tribe decided not to participate in the CWRG effort, its views of this process are uninformed by that lack of participation.</p> <p>With regard to GRDA's proposal for placement of the APE, again the Miami Tribe's comment is not accurate to the great lengths by which GRDA has gone to consult on this matter. It has consulted with CRWG participants at each stage of the relicensing study process—and each time, it clearly communicated a willingness to adjust the APE based on the results of scientific study investigating the extent of Project effects on water surface elevations of Grand Lake and its tributaries. As demonstrated in both the Initial Study Report (2021) and Updated Study Report (2022), these studies reveal that Project operations do not materially contribute to water surface elevations during flooding events—and rather, that natural inflows are responsible for flooding in the Neosho River watershed. This conclusion is buttressed by a Ph.D.-level historical investigation, included in the FLA, demonstrating that the Neosho Basin has been subjected to significant and frequent flooding—long before Pensacola Dam was constructed.</p>

#	Entity, Date	Comment	GRDA Response
		<p><i>cultural resources for Section 106 purposes. Thus, if FERC finalizes the APE without including the APE lands inundated by Project-related flooding, or concluding why such lands would be lawfully excluded, the APE will by definition be arbitrary and unsupported by necessary evidence regarding Project impacts. Indeed, GRDA acknowledges that the APE must include any impacted lands outside of the current Project Boundary.</i></p>	<p>Thus, GRDA’s recommendations regarding the placement of the APE is not at all attributable to GRDA’s inflexibility, or the inadequacy of scientific investigation, nor does it depend on GRDA’s interpretation of NDAA 2020. Rather, the APE placement is solely a result of intensive investigation over many years.</p> <p>Most recently, Commission staff’s November 29, 2022 Comments on the Updated Study Report for the Pensacola Hydroelectric Project (Accession No. 20221129-3045) requested GRDA to once again consult with and seek the concurrence of CRWG participants regarding the placement of the APE. In response, GRDA on [December, 23, 2022] circulated a letter to CRWG participants—including the Miami Tribe—articulating its basis for maintaining the APE as co-terminus with the Project boundary, based on all scientific information developed to date. This letter appears in Attachment B of GRDA’s comment/response table on cultural resources matters, which is included as part of the FLA.</p> <p>For reasons unknown to GRDA, Miami Tribe did not respond to GRDA’s [December 23, 2022] letter. While Miami Tribe is correct that the Quapaw Nation and others do not concur on the APE placement, other participants in the CRWG, including the Oklahoma State Historic Preservation Office, BIA, Oklahoma Archaeological Survey, Osage Nation, Cherokee Nation, and the Delaware Nation have concurred with GRDA’s recommended placement of the APE.</p>
66	City of Miami 03/30/2023	<p><i>The DLA is deficient because it fails to recognize that all lands flooded by operation of the dam and reservoir are part of the Project under the Federal Power Act (“FPA”). GRDA also misrepresents the extent of Corps jurisdiction with respect to GRDA’s operations when the Project reservoir is in the flood pool. In describing the Project, GRDA states that “GRDA controls the operation of the Project until the reservoir elevation is expected to exceed 745 feet PD, at which time the [Corps] has exclusive jurisdiction over Project operations, for purposes of flood control.”</i></p> <p><i>GRDA is correct that operations directed by the Corps are Project operations. The FPA defines “project” as the “complete unit of development,” including the power house, “all dams and appurtenant works and structures . . . which are a part of said unit,” and “all reservoirs[.]” Because “the Project” includes the dam and reservoir, all operations of the dam and reservoir are, by definition, Project operations.</i></p> <p><i>However, the DLA is deficient because it tries—in violation of the FPA—to exclude from “the Project” all lands flooded by operation of the dam and reservoir. In fact, the FPA definition of “project” includes “all . . . lands, or interest in lands the use and occupancy of which are necessary or appropriate in the maintenance or operation of” the complete unit of development that includes the dam and reservoir.</i></p> <p><i>This definition does not depend on the purpose of the project, nor who controls or directs any of its operations. GRDA’s misleading argument to the contrary infects every aspect of the DLA related to upstream flooding or Project operations directed by the Corps.</i></p>	<p>As explained in GRDA’s response to Comment #55, the Project described in the DLA (and now the FLA) is fully compliant with all federal laws pertaining to the Project, the historical record, and the extensive scientific and technical record that has been developed over many years in this relicensing effort.</p>
67	City of Miami 03/30/2023	<p>Project Boundary <i>The Project boundary must enclose “those lands that are necessary for safe and efficient operation and maintenance of the project or for other specified project purposes[.]”</i></p> <p><i>And yet GRDA takes the position that “lands required for flood control purposes are not included in the boundary of the Project.”</i></p>	<p>As explained in GRDA’s responses to Comments #57 and 59, the Project described in the DLA (and now the FLA), including the Project boundary depicted in Exhibit G, is fully compliant with all federal laws pertaining to the Project, the historical record, and the extensive scientific and technical record that has been developed over many years in this relicensing effort.</p>

#	Entity, Date	Comment	GRDA Response
		<i>This is patently incorrect; all upstream lands flooded by dam operations are part of the Project, and therefore must be included in the Project boundary. Setting an appropriate boundary in relicensing is particularly important because the 2020 National Defense Authorization Act (“NDAA”) appears intended to limit the Commission’s ability to amend the Project boundary once established.</i>	
68	City of Miami 03/30/2023	<p>Project Purposes <i>Ignoring the fact that the Project includes upstream flooded lands also advances GRDA’s spurious argument that flood control is not a project purpose. For example, GRDA points to the Corps’ exclusive jurisdiction and responsibility for management of the flood pool for flood control operations to claim that “[t]he exclusive [Corps] jurisdiction is not a Project purpose.”</i></p> <p><i>In other words, GRDA seems to argue that direction from the Corps for flood control operations somehow makes flood control no longer a Project purpose. But of course flood control has always been a Project purpose, and the Corps’ role does nothing to change that.</i></p>	GRDA is not arguing that flood control is not a Project purpose. Rather, as GRDA has asserted throughout this relicensing proceeding, Congress has directed that USACE—and not FERC—has exclusive jurisdiction to carry out the flood control purposes of the Project. For more information, please see GRDA’s response to Comment #59.
69	City of Miami 03/30/2023	<p>Project Operations <i>The next section of these comments discusses failures of various specific studies GRDA proffers in the DLA. However, many of those failures are obscured by GRDA’s use of “Project” in statements that could only be true if one excludes reservoir operations (and requisite lands) while under the direction of the Corps.</i></p> <p><i>For just one example, GRDA claims: Sedimentation and associated impacts to water levels are not driven by Project operations. This finding is consistent with that of the H&H Study, which demonstrated that Project operations have limited ability to dictate WSE upstream of the Pensacola Dam.</i></p> <p><i>Based on the statement later in the same paragraph that “there are no differences [in sedimentation] between the baseline operation and the anticipated operation of the Project,” it is clear that when GRDA says “Project operations,” it generally means nothing more than operations when free from Corps direction. GRDA relies on this unjustified definitional leap to wash its hands of the harm it causes upstream. For example, GRDA says it “is not proposing any measures to address flooding because [s]tudies demonstrate that flooding in the vicinity of Miami and other locations in the upper reaches of Grand Lake and upstream of the Project is not attributable to GRDA’s Project operations,” as conveniently redefined by GRDA.</i></p> <p><i>These statements ignore the fact that all operations of the dam and reservoir (whether at Corps direction or not) are operations of the “Project” for FPA purposes, and therefore that all the lands needed for those operations are also part of the “Project.” Any study or statement in the DLA that describes the impacts of “Project operations” is likely defective due to similar reliance on GRDA’s unsupportable definition of the Project.</i></p>	<p>As explained in GRDA’s responses to Comments #55, 57, 59, and 104, the Project described in the DLA (and now the FLA) is fully compliant with all federal laws pertaining to the Project, the historical record, and the extensive scientific and technical record that has been developed over many years in this relicensing effort.</p> <p>In addition, while the City of Miami is correct that GRDA’s Project operations do not materially affect upstream water surface elevations along the Neosho River, Spring River, Elk River, and Tar Creek during flooding events, that is not the sole basis for GRDA’s decision not to propose new license measures to address flood control. Rather, GRDA’s decision is also guided by federal statutes—including the Flood Control Act of 1944 and NDAA 2020—that confer exclusive authority upon USACE to manage flood control at the Project. Under these statutes, the Commission is without legal authority to impose any flood control measures, and the City of Miami has cited to no authority indicating otherwise. GRDA will not be seeking license measures that the Commission has no authority to include in the license.</p>
70	City of Miami 03/30/2023	<p>Cumulative Impacts <i>GRDA continues to shirk the review of cumulative impacts necessary to fully understand the Project’s impacts, and misleadingly labels as “natural” any effects caused by physical presence and historical (e.g. sedimentation and changes in channel roughness due to vegetation) impacts of the dam. This is despite GRDA’s acknowledgement that any Project effect on transport of contaminated sediment from the upstream Superfund sites is at least a cumulative impact. (In fact, they are direct impacts, as the City has noted.)</i></p>	The City raised this issue in its USR comments, which GRDA addressed on pages 37 to 39 of its Response to Comments on Updated Study Report. Accession No. 20221229-5237. Because Commission staff rejected this comment by the City on page B-14 of its Determination on Requests for Study Modifications and New Studies for the Pensacola Hydroelectric Project, Accession No. 20230314-3035, there is no reason for GRDA to again respond to this issue.

#	Entity, Date	Comment	GRDA Response
71	City of Miami 03/30/2023	<p>Economic Impacts <i>Further, unlike almost every other hydroelectric project the Commission regulates, GRDA has been found liable in state court for upstream flooding regularly caused or exacerbated by the Project. As such, analyzing past conditions is the only way to ensure that the Commission’s economic analysis of the Project includes GRDA’s liability under Oklahoma law for the Project’s ongoing operations.</i></p>	<p>The City raised this issue in its USR comments, which GRDA addressed on page 40 of its Response to Comments on Updated Study Report. Accession No. 20221229-5237. Because Commission staff rejected this comment by the City on page B-14 of its Determination on Requests for Study Modifications and New Studies for the Pensacola Hydroelectric Project, Accession No. 20230314-3035, there is no reason for GRDA to again respond to this issue.</p>
72	City of Miami 03/30/2023	<p>Immaterial <i>As the City noted in its USR Comments on GRDA’s Updates Study Report (“USR Comments”), GRDA’s technical studies—particularly the upstream hydraulic modeling (“UHM”) and sedimentation studies—assert without articulating any qualitative or quantitative standard that the Project’s impacts are “immaterial” (or similar vague concepts like “appreciable”). In the USR technical conference, GRDA’s counsel and consultants, when pressed, eventually refused to answer questions about the basis for these conclusions, whether they have any precedent in the relevant fields, and whether the consultants had ever arrived at similar conclusions with respect to other projects. Commission Staff, in its subsequent determination on requests for study modifications, did not respond to the City’s request that GRDA be required to explain these vague and unprincipled conclusions.</i></p> <p><i>GRDA repeats these conclusions in the DLA’s environmental report on the UHM and sedimentation study. Accordingly, the DLA suffers from the same lack of support in the record that the City’s USR Comments asked the Commission to rectify.</i></p>	<p>The City raised this issue in its USR comments, which GRDA addressed on pages 46-49 of its Response to Comments on Updated Study Report. Accession No. 20221229-5237. Because Commission staff did not direct any changes to the studies based on this comment by the City in its Determination on Requests for Study Modifications and New Studies for the Pensacola Hydroelectric Project, Accession No. 20230314-3035, there is no reason for GRDA to again respond to this issue.</p>
73	City of Miami 03/30/2023	<p>Full Range of Project Operations <i>Even GRDA’s own modeling demonstrates hundreds or thousands of acres of unauthorized upstream flooding as a result of Project backwater under many flood conditions. These impacts are being further characterized in additional modeling work by GRDA in response to the Commission’s Second Study Modification Determination, and likely in work Tetra Tech will perform thereafter to fill gaps and correct problems with GRDA’s modeling.</i></p>	<p>The City has completely misconstrued the results of GRDA’s models and other studies undertaken in this relicensing process. These studies demonstrate that GRDA’s Project operations do not result in any “unauthorized upstream flooding,” as alleged by the City. Quite to the contrary, these studies demonstrate that Project operations do not materially affect water surface elevations along the Neosho River, Spring River, Elk River, or Tar Creek during flooding events. Rather, this flooding is attributed to natural inflows. Moreover, GRDA’s technical studies are buttressed by a Ph.D.-level historical investigation, included in the FLA, demonstrating that the Neosho Basin has been subjected to significant and frequent flooding—long before Pensacola Dam was constructed. And in light of Congress’ directives under NDAA 2020, any flooding that may occur outside of the current Project boundary cannot accurately be characterized as “unauthorized,” as Congress has directed that these lands “shall not be considered to be part of the project.” NDAA 2020 § 7612(b)(3)(B).</p> <p>At this late stage in the pre-filing relicensing process—after the City and its consulting team have had literally years to peer review and scrutinize GRDA’s models and corresponding work products—it is simply irresponsible and disingenuous for the City to wholly misstate the findings of these studies.</p> <p>Similarly, GRDA is perplexed by the City’s statement that it will be providing additional work product “to fill gaps and correct problems with GRDA’s modeling.” The Commission approved a study plan for the relicensing of the Project back in 2018—with considerable input from the City and its consulting team. And in the nearly 5 years since, the City and its consultants have continued to actively engage in the development of the models and comment on study results. As a result of this engagement, Commission staff has now concluded on page B-9 of its Determination on Requests for Study Modifications and New Studies for the Pensacola Hydroelectric Project, Accession No. 20230314-3035, that:</p>

#	Entity, Date	Comment	GRDA Response
			<p>“GRDA has met the requirements of the approved study plan with respect to the modeling of a range of scenarios and reporting the results. The information provided is sufficient for an analysis of a realistic range of operational alternatives. Therefore, we do not recommend that GRDA be required to analyze a wider range of operational alternatives.”</p> <p>Thus, it is simply too late at this point—and certainly antithetical to the Commission’s Integrated Licensing Process regulations—for the City to disregard Commission staff’s findings related to the approved study plan by submitting information that Commission staff has determined to be unnecessary, and outside the approved study plan. It would be inequitable, moreover, to allow the City to unilaterally file scientific or technical information in the record that has not been subjected to the level of scrutiny of GRDA’s modeling work and other studies as provided under the ILP.</p> <p>Should the City file any substantive information, GRDA reserves the right to object procedurally and substantively to such filing.</p>
74	City of Miami 03/30/2023	<p>Full Range of Project Operations <i>Meanwhile, Tetra Tech has performed new statistical analysis of historical stage and discharge measurements at the USGS Miami and Commerce gages and the gage at Pensacola Dam. This evidence from past operations shows the impact of Project backwater on water surface elevations in Miami at specific times, and allows statistical estimation of the increase in water surface elevation in Miami in response to each foot that water is held higher at the dam.</i></p> <p><i>Tetra Tech’s analysis (presented in the appendix to these comments) shows a consistent, marked increase in the water surface elevation in Miami in response to reservoir level at Pensacola Dam (i.e., Project operations) when flows in Miami exceed 10,000 cfs. When the water level at the dam is at or above 742 feet PD during such flows, the water level at Miami rises an estimated 4 feet for every 10-foot water level increase at the dam. This correlation has strong statistical significance: Based on the periodic USGS measurement data, there is a 90% chance that the true effect is between 3 and 5 feet of increased water in Miami for every 10 feet at the dam, with a 5% chance that the response in Miami is more than 5 feet and a 5% chance that it is less than 3 feet.</i></p> <p><i>In contrast, the data from Commerce Gage, 10 miles upstream and about 20 feet higher in elevation, shows only a slight probable backwater effect, illustrating what the Miami data would show if the Project truly had little impact in Miami. The following figures compare the data from the two gages. The solid black best-fit lines (labeled “Actual Trend”) show that dam operations have a large impact on water surface elevations in Miami (steep slope), but small impact on water surface elevations farther upstream at the Commerce Gage (nearly flat slope).</i></p> <p><i>This new analysis empirically contradicts GRDA’s unsupported conclusion in the UHM study that operation of the Project has no “appreciable” or “material” impact on water surfaces in Miami (as discussed in the previous section).</i></p> <p><i>Moreover, GRDA has not corrected any of the problems with the UHM study identified by the City and others in response to GRDA’s USR. Some of those problems GRDA is required to correct under the Commission’s recent Study Modification Determination, and others Tetra Tech intends to correct with further analysis in response to the FLA. The City also notes that many of GRDA’s conclusions with respect</i></p>	<p>The City’s new analysis should be disregarded for the following reasons:</p> <ol style="list-style-type: none"> 1. The City’s analysis seeks to duplicate, in a simplistic fashion, the complex scientific study the Commission has required. 2. The City admits that its analysis is biased. A mathematically defensible analysis, using the same publicly available USGS data, shows no trend and no backwater impact from GRDA’s anticipated operations. 3. The City’s proffered analysis violates the well-established procedures of the ILP that govern the decisions making process related to study needs. <p>All these reasons are discussed in detail below.</p> <p>Duplication of the Commission’s required study: Not satisfied with the rigorous and complex scientific study the Commission required, the City seeks to add a new, overly simplified analysis at this late stage in the ILP and duplicate the study the Commission required. The Commission has gone to great lengths over the past several years to ensure that GRDA’s Hydrologic and Hydraulic Modeling is scientifically robust, uses best practices from public agencies, and reflects stakeholder input. To that end, the Commission’s study plan required GRDA to use the HEC-RAS model developed by the City’s consultant as the basis for its modeling efforts. GRDA has spent countless hours:</p> <ol style="list-style-type: none"> 1. Improving the HEC-RAS model geometry, 2. Calibrating the model to a set of well-documented historical events, 3. Simulating a vast library of hydrodynamic scenarios that analyze a wide range of inflow events coupled with the full range of anticipated operations and even a set of extreme, hypothetical operations, 4. Analyzing the frequency, timing, amplitude, and duration of inundation, and 5. Updating the study report in response to public comment. <p>Now at this very last stage of the pre-filing ILP—after all the scrutiny, refinement, and peer review exerted on the Commission-required modeling work (please see GRDA’s response to Comments #57, 59, and 73)—the City seeks to unilaterally replace that effort with a hasty (and flawed, as proven below) analysis at two discrete points within the study domain, ignoring the fact that the Hydrologic and Hydraulic Modeling fully encompasses those two locations and has studied them with robust, scientific methodology. The City’s</p>

#	Entity, Date	Comment	GRDA Response
		<p>to upstream flooding are erroneous because they are premised on the erroneous legal conclusion (explained above) that flooded upstream lands are not part of the Project.</p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="459 372 1041 856"> <p style="text-align: center;">(a) Miami</p> </div> <div data-bbox="1072 372 1631 856"> <p style="text-align: center;">(b) Commerce</p> </div> </div> <p>Figure A1. USGS measured discharge and corresponding stage: (a) Miami gage at discharges greater than 10,000 cfs between May 2013 and June 2022 and (b) Commerce gage between September 1981 and March 2022 (the beginning of the available data sets).</p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="459 957 1041 1441"> <p style="text-align: center;">(a) Miami</p> </div> <div data-bbox="1072 957 1631 1441"> <p style="text-align: center;">(b) Commerce</p> </div> </div> <p>Figure A2. Deviations of the measured stages from the reference lines in Figures A1(a) and A1(b) versus corresponding water-surface elevations at Pensacola Dam: (a) Miami and (b) Commerce. Also shown are the best-fit regression line (marked “Actual Trend” in (a)) and upper and lower 90-percent (2-sided) confidence bounds on the regression.</p>	<p>“statistical” analysis should not be used to replace many years of Commission-approved hydrodynamic modeling.</p> <p>Bias in the City’s analysis and a corrected, mathematically defensible analysis: In the first paragraph of the Appendix (page 13) to the City of Miami’s filing, the City’s consultant admitted that “a line was visually-fitted to the lower bound of the data site for the Miami gage” (emphasis added). There is no justifiable reason to create a biased, “visually-fitted” trendline. GRDA re-created the City’s analysis and tried fitting various statistical trendlines to the publicly available USGS data used in the analysis; no statistical trendline matched the City’s “visually-fitted” trendline. In Figure A1(a) on page 14 of the City’s filing, the “Reference Line” is generally forced to fit the lower bound of USGS data while simultaneously ignoring data inconvenient to the City’s narrative. This is most apparent in the upper right corner of the figure, where the “visually-fitted” trendline is offset <u>5 vertical feet</u> above the lone USGS measurement through which a mathematical trendline would pass. The figure graphically confirms what the City admitted: its analysis is founded on biased trendline.</p> <p>Figure 1 displays a re-creation of the City’s Figure A1(a) with an important addition: a mathematically defensible, unmodified trendline. The unmodified trendline was generated using a second order polynomial equation. The difference between the biased, “visually-fitted” trendline (black line) and the unmodified trendline (green line) is striking. Not only does the comparison show how the biased trendline was forced through the lower bound of most data while ignoring a high stage/high flow USGS measurement, the comparison also makes the artistic nature of the biased trendline more apparent.</p>

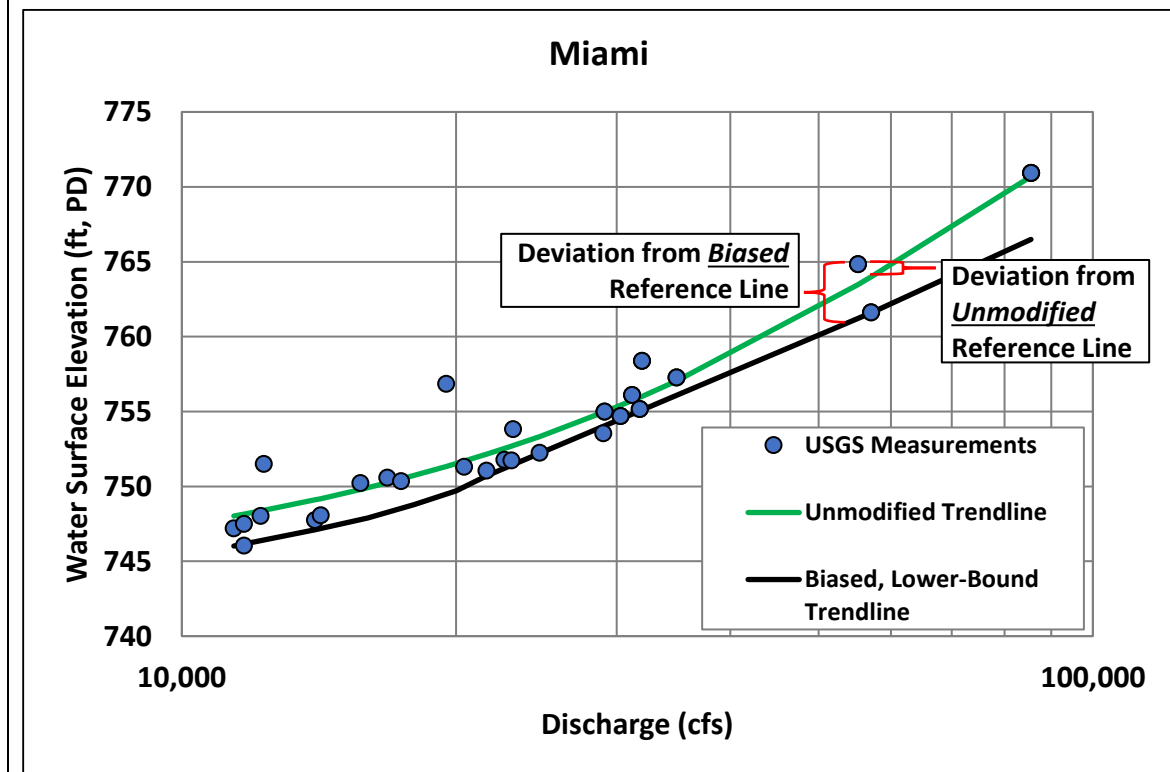


Figure 1. Re-creation of the City of Miami’s Figure A1(a) with additional statistical information: an unmodified trendline.

The mark-ups on **Figure 1** also re-create the City’s purported “Deviation from Reference Line” example and add a real, unbiased deviation example. The real deviation is miniscule in comparison to the biased deviation. Additionally, a number of USGS measurements fall below the mathematically defensible trendline, refuting the City’s narrative.

GRDA used calculated deviations from the unbiased, mathematically defensible trendline to re-create the remainder of the City’s analysis at Miami. The results are presented in **Figure 2**, which re-creates the City’s Figure A2(a) (page 14 of the City’s filing). After replacing the forced trendline with a mathematically defensible trendline, there is no “obvious and strong trend in the Miami data” (City, page 13, second paragraph) within GRDA’s anticipated operational range.

In summary, GRDA used the same publicly available USGS data to re-create the City’s analysis. GRDA removed the admitted bias of the “visually-fitted” trendline and found that there is no trend showing a backwater effect at the City of Miami from GRDA’s anticipated operational range.

#	Entity, Date	Comment	GRDA Response
			<div data-bbox="1690 278 2784 1010" data-label="Figure"> </div> <p data-bbox="1690 1024 2834 1084"><i>Figure 2. Re-creation of the City of Miami’s Figure A2(a) with results from mathematically defensible analysis.</i></p> <p data-bbox="1690 1110 2063 1141">Violation of ILP Requirements:</p> <p data-bbox="1690 1145 2896 1366">Under the ILP, all studies and investigations must be approved by the Commission as provided in sections 5.9 through 5.15 of the Commission’s regulations. In this case, the City had the opportunity to advocate for the analysis it has unilaterally submitted to the record in its proposed study requests (18 CFR § 5.9); in response to GRDA’s Proposed Study Plan (18 CFR § 5.11); in response to GRDA’s Revised Study Plan (18 CFR § 5.13); at the ISR stage (18 CFR § 5.15(c)); and at the USR stage (18 CFR § 5.15(f)). The City failed to do so, and it is now much too late to seek to have its unilaterally proffered analysis considered in this relicensing effort.</p> <p data-bbox="1690 1403 2865 1463">Moreover, the City made no attempt when filing its analysis to demonstrate that this analysis satisfies the mandated study criteria under section 5.9(c) of the Commission’s ILP regulations.</p> <p data-bbox="1690 1499 2896 1624">Thus, not only is the City’s analysis admittedly biased, it also seeks to disrupt the governing requirements of the ILP by filing an untimely, new analysis, without any prior review or approval by Commission staff, GRDA, and other relicensing participants. To protect the integrity and fairness of the ILP, the Commission should reject the City’s attempt to unilaterally supplement the analytical record in this relicensing process.</p>

#	Entity, Date	Comment	GRDA Response
75	City of Miami 03/30/2023	<p>Tribal Reservation and Land Rights <i>The record does not support GRDA’s assertion that it holds all necessary rights to Tribal lands affected by the Project. The DLA includes a land analysis report purporting to dispose of all potential Tribal trust land rights issues in this relicensing. However, in its comments on GRDA’s USR, Commission Staff requested that GRDA “provide a summary of any existing legal rights that the participating Tribes may have to resources within the Project boundary.” In response, GRDA claimed that “Congress disestablished any treaty rights and associated reservations with respect to the Pensacola Hydroelectric Project” through a 1940 law. GRDA claims that the law “expressly grants to GRDA ‘all the right, title, and interest held by the U.S. and by individual Indians and tribes of Indians in Indian lands’” in the four Project counties, below elevation 750.</i></p> <p><i>In fact, the legislation was not self-implementing, though GRDA omits any mention of the steps required to benefit from it. Any grant thereunder to GRDA is “subject . . . to the consent of the respective individual Indian owners or tribes as the case may be, the approval of a map of definite location by the Secretary of the Interior, and the payment of such compensation as he may determine”; if the owners or tribes will not consent, GRDA may only take the lands through condemnation “in the appropriate Federal district court,” presumably the Northern District of Oklahoma.</i></p> <p><i>GRDA neither asserts nor offers evidence that it took any of the necessary steps to acquire interests in any lands under that legislation. With significant, though not exhaustive, research, the City has not found any such evidence, including in initial searches of reported cases from the Northern District of Oklahoma federal court and online records of the Department of Interior. Before submitting its final license application, GRDA should either provide record evidence of any interests it acquired under the 1940 act (such as a map of definite location) or concede that it never took the additional steps required by statute. These issues are particularly important in light of the broad Tribal rights in Oklahoma recently recognized by the U.S. Supreme Court in <i>McGirt v. Oklahoma</i>.</i></p>	As explained in GRDA’s responses to Comments #62-63, the City’s allegations regarding the lack of evidence of GRDA’s acquisition of Project lands are unfounded and wrong. DLA, Exhibit A, Appendix A-5 demonstrates that GRDA holds all necessary property rights necessary and appropriate for the operation and maintenance of the Project. This information appears in the same location of the FLA.
76	City of Miami 03/30/2023	<p>Tribal Terrestrial Resources <i>The Commission’s scoping document requires the DLA to address “[e]ffects of project operation and maintenance activities and project-related recreation on terrestrial resources of cultural significant to Indian tribes in the project area, including wild strawberries.” In the terrestrial resources section of the environmental document, GRDA indicates that this issue is discussed in the section on cultural resources.</i></p> <p><i>However, the information required by the Commission’s regulations appears nowhere in that section. Moreover, as noted by multiple stakeholders, there is strong evidence that tribal consumption of terrestrial resources is an especially worrisome potential exposure pathway for contaminant transported from the upstream Superfund sites.</i></p>	Information on wild strawberries has been addressed, as provided in SD 2, in the TCP inventory, as well as in the TCP effects analysis. As required by the National Historic Preservation Act, these documents are privileged and confidential and not available to the public.
77	City of Miami 03/30/2023	<p>Historical Operations <i>The City recently explained three reasons that GRDA’s studies put the validity of this relicensing at risk by ignoring the contribution of the Project’s historical operations to its ongoing impacts. First, examining pre-Project conditions and historical impacts will generate the factual record necessary for the Commission to conduct the analysis required by the National Environmental Policy Act (“NEPA”) and other governing statutes. Second, analysis of past conditions will help the Commission evaluate measures to improve from the present baseline and mitigate historic impacts—recognized as an appropriate aim of relicensing since the Commission developed the ILP process and before. Third, and perhaps uniquely, analyzing past conditions is the only way to ensure that the Commission’s economic analysis of the Project</i></p>	The City raised these issues regarding pre-Project conditions and environmental baseline issue in its USR comments, which GRDA addressed on pages 36 to 40 of its Response to Comments on Updated Study Report. Accession No. 20221229-5237. Because Commission staff rejected this comment by the City on pages B-14 to B-15 of its Determination on Requests for Study Modifications and New Studies for the Pensacola Hydroelectric Project, Accession No. 20230314-3035, there is no reason for GRDA to again respond to this issue.

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		<p>includes GRDA's liability under Oklahoma law for the Project's ongoing flooding effects. The cited section of the City's USR Comments elaborates on each of these.</p> <p>Because GRDA's studies comprise the primary substance of Exhibit E of the DLA as required by the Commission's regulations, the DLA is insufficient for the same reasons identified in the City's USR comments. Similarly, any Commission licensing decision that ignores these historical contributions to ongoing Project impacts will be legally insufficient.</p>	
78	City of Miami 03/30/2023	<p>Proposed PM&Es GRDA fails to propose measures related to unauthorized flooding caused by the Project, "including, but not limited to, changes in the project design or operations" and how they would "protect or enhance the existing environment" as required in the DLA. GRDA discusses PM&Es for water resources in only ten lines, mostly devoted to avoiding any. It proposes only to continue implementing its dissolved oxygen mitigation plan, and expressly disclaims any measures to address flooding. This reflects GRDA's attempt to rewrite the FPA definition of "project," discussed in Section I above.</p>	<p>As discussed in GRDA's responses to Comments #55, 57, 59, 69, and 104, there are numerous reasons why GRDA did not propose measures to address flooding along the Neosho River, Spring River, Elk River, and Tar Creek. First, the extensive studies conducted in this relicensing effort demonstrate that flooding is caused by natural events, and that Project operations do not materially affect water surface levels at the Project or in upstream reaches. Second, Congress for decades has repeatedly established that USACE—not the Commission—has exclusive responsibilities for flood control at the Project.</p> <p>GRDA cannot reasonably be expected to propose measures over a matter that is not caused or exacerbated by Project effects, and which the Commission has no jurisdiction to address.</p> <p>Moreover, GRDA cannot reasonably be expected to propose mitigation measures in a situation that not only is unattributable to the Project and outside the Commission's jurisdiction, but also involves an issue that the City itself has refused to address. As the City is fully aware, Congress, through USACE, made funding available to the City over 30 years ago for purposes of constructing levees that would protect the City during high-flow events. For reasons unknown to GRDA, the City's Board of Commissioners voted against initiating this effort, causing USACE to discontinue the investigation.</p> <p>These historical events of the City refusing federal funding opportunities are described in more detail in <i>A Historic of Flooding, Flood Control, and Hydropower on the Neosho (Grand) River (2023)</i>, a Ph.D.-level historical analysis that is attached to the FLA.</p>
79	City of Miami 03/30/2023	<p>Proposed PM&Es The Commission should include in the license (and GRDA should include in the FLA) measures to protect, mitigate, and enhance upstream land and communities impacted by the Project's backwater flooding. Since the Project's earliest days, its purposes have included flood control, and the Commission has imposed various license conditions targeted at upstream flooding, including the impacts of operations at Corps direction. The Commission should follow the same principle today, in light of modern analysis of present and future Project impacts. These measures will evolve as studies by GRDA, Tetra Tech, and the Commission progress, but the license should include a combination of measures, such as the following types:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Modifications to dam operations (at least for protection of project safety and human health); <input type="checkbox"/> Infrastructure improvements (for example, the Project's original license required GRDA to raise all affected railroads high enough to operate when the reservoir was at the top of the flood pool, elevation 755.); <input type="checkbox"/> Monitoring of upstream flood impacts against model predictions and maintenance or adaptive management of adopted PM&E measures; 	<p>Please see GRDA's response to Comment #78.</p>

#	Entity, Date	Comment	GRDA Response
		<input type="checkbox"/> Improved communication and coordination with upstream flooded communities and other stakeholders; <input type="checkbox"/> Assistance with flood cleanup and recovery when caused or contributed to by the Project; and <input type="checkbox"/> Purchase of property rights where the foregoing measures do not fully protect lands flooded by the Project beyond GRDA's property rights.	
80	City of Miami 03/30/2023	<p>Proposed PM&Es <i>Hydropower relicensing is not a one-way ratchet of environmental degradation. Where past Project effects and their contribution to present impacts resulted from incomplete information or antiquated environmental practices, the Commission can and should require enhancements beyond the current Project baseline—the “E” in “PM&E.” In this regard, the DLA shows that the Project is very profitable and can financially support PM&Es to address the harm it causes. GRDA estimates that “[t]he total annual value of project power (capacity and energy) is \$25,473,240.” It estimates operations and maintenance expenses, including anticipated environmental measures, of \$17.6 million, acknowledging that it is still “in the process of evaluating the need” for PM&E measures. Thus, GRDA estimates a net profit on the Project of about \$7.8 million per year, or a tidy 31% of gross revenue. In short, the Project is highly profitable, and its finances would remain viable even with substantial funding of PM&Es to address its ongoing impacts. Likewise, GRDA as a whole reports a total net financial position of \$778 million in 2021, up 30% over five years, and annual net revenues of \$45 million to \$158 every year for the last ten years. Its 2021 debt service coverage (DSC) ratio was 2.05 and its net revenue was 15% of total operating revenue. In short, both the Project alone and GRDA as a whole have ample capacity to contribute to the costs of the harm they impose upstream.</i></p>	<p>There is no basis for the City’s allegation that this relicensing effort amounts to “a one-way ratchet of environmental degradation.” Quite to the contrary, GRDA—in consultation with an array of federal and state regulators, Native American Tribes, and other relicensing participants, including the City—has undertaken an exhaustive investigation of potential Project effects across multiple disciplines, in accordance with a study plan that has been approved by Commission staff. Based on that robust scientific and technical record, GRDA has identified numerous proposed protection, mitigation and enhancement measures in its DLA (and now in the FLA) that appropriately address Project effects and meet public interest considerations.</p> <p>While GRDA has not proposed flood control measures as advocated by the City, GRDA’s approach is entirely supported by the scientific and technical record, as well as legal requirements that are special to this Project. Please see GRDA’s response to Comment #78.</p> <p>In addition, the City’s argument that the Commission should impose flood control measures simply because GRDA can afford such measures is antithetical to the FPA, which requires the Commission to establish license conditions based on the public interest and comprehensive development standard under FPA sections 4(e) and 10(a). In discharging its responsibilities under this standard, the Commission has held that there is no basis for requiring mitigation measures in the absence of a showing that the project harms a resource or that the mitigation measure would have any appreciable benefit. <i>E.g., Wis. Power and Light Co.</i>, 94 FERC ¶ 61,294 (2001). The City’s request that the Commission impose enhancement measures that are untethered to any demonstrated effects of the Project—simply because GRDA can afford it—reflects an astounding misunderstanding of the purpose, language, and policies of the FPA.</p> <p>In any event, the financial information provided by the City of Miami is misleading and incorrect. The City overlooks that GRDA is a non-profit state governmental entity; all of its costs are passed through to its electric customers, including the City. In addition, the net revenues data cited by the City come from GRDA’s 2021 Annual Comprehensive Financial Report (ACFR). GRDA’s Net revenues as referenced represent the Net Revenues Available for Capital Improvements or Other Authorized Purposes, and do not represent net revenues to GRDA. Net revenues, which is titled Net Increase in Net Position, over the last ten years (2012 through 2021) ranged from \$3.4 million to \$68.8 million. (pages 75 and 76 of 2021 ACFR). Net revenue for 2021 was 11.8% of Operating Revenue (pages 73 and 75 of 2021 ACFR).</p>
81	City of Miami 03/30/2023	<p>Analysis of backwater effects in stage and discharge gage data from Commerce, Miami, and Pensacola Dam <i>The USGS periodically performs field measurements of the discharge and corresponding stage (or water-surface elevation) at the Miami and Commerce gages, and the results of these measurements are published on the USGS National Water Information System (NWIS) website (https://waterdata.usgs.gov/nwis/sw). If water-levels in Grand Lake cause higher water-surface elevations at the gages, deviations of the measured water-surface elevations from an arbitrary reference line through the measured data will be larger when</i></p>	<p>Please see GRDA’s response to Comments #73-74.</p> <p>In addition, the City—which obviously is not satisfied with the results of the Commission-approved study plan and the very studies for which the City itself strongly advocated—now seeks to unilaterally add a new, overly simplified analysis at this late stage in the ILP, in an obvious attempt to undermine and detract from the results of the Commission-approved study plan. Commission staff have gone to great lengths over the past two study years to ensure that GRDA’s Hydrologic and Hydraulic Modeling is scientifically robust, uses</p>

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		<p><i>the reservoir levels are higher. The possibility of such a trend for the higher range of measured flows (>10,000 cfs) was evaluated at each of the gages by establishing a baseline curve for each dataset (Figures 1 and 2) and calculating the deviation of each measured water-surface elevation from that curve. The current USGS stage-discharge rating curve was used for the Commerce gage, and a line was visually-fitted to the lower bound of the data site for the Miami gage. The computed deviations were then plotted as a function of the water-surface elevation at Pensacola Dam, and linear least-squares line with upper and lower 90% confidence bounds was then fit to each of those plots (Figure 3 and 4).</i></p> <p><i>There is an obvious and strong trend in the Miami data (Figure 3). The slope of the best fit regression line is 0.397, which means that a 10-foot increase in water level at Pensacola Dam causes about a 4-foot increase in the water-surface elevation at Miami over this range of flows. While there is considerable scatter in the data, the 90% (2-sided) confidence interval on the slope of this line is 0.304 to 0.49. That means there is a 90% probability that the water level at Miami rises by at least 3 but less than 5 feet in response to a 10-foot increase in water level at the dam over this range of flows, with a 5% chance that the response in Miami is more than 5 feet and a 5% chance that it is less than 3 feet.</i></p> <p><i>The slope of the best-fit line for the Commerce data set is 0.023 (i.e., 0.23-foot increase in water-surface elevation at Commerce with a 10-foot increase in lake level), and the upper and lower confidence bounds on the slope are -0.030 and 0.034, respectively. The negative lower bound means there is a small, but statistically-significant chance that water-levels at the dam do not cause an increase in water-surface elevations at the Commerce gage based on these measurements.</i></p>	<p>best practices from public agencies, and reflects stakeholder input. To that end, the Commission’s study plan required GRDA to use the HEC-RAS model developed by the City’s consultant as the basis for its modeling efforts. GRDA has spent countless hours:</p> <ol style="list-style-type: none"> 1. Improving the HEC-RAS model geometry, 2. Calibrating the model to a set of well-documented historical events, 3. Simulating a vast library of hydrodynamic scenarios that analyze a wide range of inflow events coupled with the full range of anticipated operations and even a set of extreme, hypothetical operations, 4. Analyzing the frequency, timing, amplitude, and duration of inundation, and 5. Updating the study report in response to public comment. <p>Now at this late stage in the ILP, the City seeks to replace that effort with a hasty (and flawed, as proven in the response to Comment #74 above) analysis at two discrete points within the study domain, ignoring the fact that the Hydrologic and Hydraulic Modeling fully encompasses those two locations and has studied them with robust, scientific methodology. The City’s “statistical” analysis should not be used to replace many years of complex and sophisticated hydrodynamic modeling that has been highly scrutinized by Commission staff, the City and its consulting team, and all other relicensing participants.</p>
82	City of Miami 03/30/2023	<p>Allegation of Flaws in Updated Sedimentation Study Report</p> <p><i>GRDA’s STM results absurdly suggest that essentially all of the very fine sand (VFS) delivered to the head of the study reach is deposited in the overbanks upstream from Tar Creek rather than being transported downstream and deposited in the channel where it continues to build the sediment “hump” that formed at the head of the reservoir after construction of Pensacola Dam. As the City and Tetra Tech have previously noted, GRDA’s grab samples from the riverbed throughout the reach, including the hump and many miles above, are dominated by sand (DWT, 2022b)—a reality completely inconsistent with GRDA’s model results that suggest that the vast majority (>99%) of such sediment would be deposited in overbank areas upstream from Tar Creek. (DWT, 2022a) (Tetra Tech, 2022)</i></p>	<p>Sediment core sampling in the region of the delta feature conducted in February 2022¹ showed that a majority (>89%) of sediment in the cores was finer than 0.0625 mm, meaning less than 11% consisted of VFS or coarser material. To claim that this feature is “dominated by sand” is false and does not match the actual field measurements.</p> <p>Furthermore, the volume of VFS in the system is a small portion of the overall sediment load. An overwhelming majority of the material moving through the system consists of silts and clays in suspension, and the coarser material accounts for just 0.6% of the total load. To say otherwise is misleading.</p> <p>Regardless, the STM does include VFS in the overbank gradations. The total volume of deposition of coarse material would account for just 0.7 ft of change in bed elevation at the delta feature if spread across the entire movable bed limits in the model; if it were confined to only the channel (an unrealistic assumption that was not used in the STM), that same volume would account for just 4.6 ft of bed elevation change.</p> <p>The simple reality is that the City’s assertion that there is significant VFS and coarser material flowing downstream is inconsistent with field measurements of the bedload sediment transport. If it had been moving in significant quantities, it would have been detected by the bedload sediment transport measurements (that have previously been approved by FERC) made during this study.</p> <p>If the Neosho River were transporting significant quantities of coarse sediment, there would be a delta of coarse material at the head of the reservoir. Surveys of channel geometry data over time show that no such delta of coarse sediment has formed. The only delta feature that exists is many miles downstream and</p>

¹ Appendix 4 of Updated Study Report dated September 30, 2022 (Accession No. 20220930-5106).

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			<p>consists primarily of fine material, more than 89% of which is finer than 0.0625 mm and in the silt/clay size range².</p> <p>Byerley (1995)³ also supports GRDA’s findings that there is little to no coarse sediment transport in the Neosho River. He studied the sources of gravel for the lower Neosho River. He concludes that the primary sources for gravel are upstream of John Redmond Reservoir in the Flint Hills region and that John Redmond Reservoir is an “absolute barrier” to the source of coarse sediment to the lower Neosho River. The study also found that there are no significant sources downstream of John Redmond to supply coarse sediment to the Neosho River.</p> <p><i>“Chert gravels, derived from upstream sources in the Flint Hills region, formerly replenished the gravel bars and riffles on the lower Neosho River due to frequent flooding events. Now, John Redmond Reservoir acts as an absolute barrier to the transportation of tractive sediment downstream. The only chert gravel sources with the potential to enter the lower Neosho River channel are from the low-terrace and floodplain alluvium. The upland chert gravels are not a viable source due to their high and remote topographic positions above and away from the river valley. The lack of floods of magnitude, bank-full or out-of-bank, has significantly reduced the erosion of channel banks and bed. Therefore, the chert gravels entering and replenishing downstream gravel bars and riffles are a finite, non-renewable resource.”</i></p> <p>No coarse delta has formed, there is a measured lack of coarse bedload sediment transport, and analysis of coarse material sources by Byerley (1995)⁴ indicates that the lower Neosho has limited coarse gravels available for transport. These facts all refute the City’s theoretical arguments regarding equal mobility as well as their perspective regarding the alleged significance of the small incoming coarse sediment load.</p>
83	City of Miami 03/30/2023	<p>Allegation of Flaws in Updated Sedimentation Study Report <i>Contrary to the overwhelming geomorphic evidence, GRDA assumes that the bed of the Neosho River is covered by a static armor layer [i.e., It...can be considered a relict/non-fluvial river... (GRDA, 2022a), App D, p12)] and that no sediment coarser than VFS is carried into the study reach. Incorporating that erroneous assumption into GRDA’s model further limits the amount of sediment that is deposited by GRDA’s model at the head of the reservoir.</i></p>	<p>The City has presented nothing close to “overwhelming” evidence in support of their position. FERC has already approved GRDA’s field measurements of sediment transport, which consistently found there was no significant transport of coarse material even at relatively high flow rates. The City has yet to produce evidence contradicting the relict/non-fluvial tendencies of these streams, instead relying on grab samples of the river 25 years ago that were collected in violation of standard and accepted practice whereby they removed the coarse armor layer from the surface of the bed and only sampled the finer sized sediment beneath the armor layer.⁵</p> <p>GRDA also ran simulations using the STM with additional coarse bedload material entering the system. Bedload estimates were based on sediment mobility analysis at extreme flows. These results did not show significant coarse material transport.</p> <p>As explained in GRDA’s response to Comment #82, coarse material accounts for just 0.6% of total sediment moving through the system. It is unreasonable to then conclude that this small volume (which is included in the modeling) would account for the amount of deposition implied by the City.</p>

² Appendix 4 of Updated Study Report dated September 30, 2022 (Accession No. 20220930-5106).

³ Byerley, R. D., 1995, Chert gravel sources, hydrology, transportation, and deposition within the lower Neosho River, southeastern Kansas: M.S. thesis, Emporia State University, 79 p.

⁴ Byerley, R. D., 1995, Chert gravel sources, hydrology, transportation, and deposition within the lower Neosho River, southeastern Kansas: M.S. thesis, Emporia State University, 79 p.

⁵ "Neosho River Sediment Transport - Technical Memo" - Included as Appendix D of the *Response to Comments on Updated Study Report* dated December 29, 2022 (Accession No. 20221229-5237). It is based on reference: Bunte, K. and S.R. Abt, 2001. *Sampling Surface and Subsurface Particle-Size Distributions in Wadable Gravel- and Cobble-Bed Streams for Analyses in Sediment Transport, Hydraulics, and Streambed Monitoring*. US Forest Service, Rocky Mountain Research Station General Technical Report RMRS-GTR-74.

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84	City of Miami 03/30/2023	Allegation of Flaws in Updated Sedimentation Study Report <i>The USR presents extensive speculation about other potential factors that could be responsible for the sediment “hump” to obscure the obvious fact that it is composed of sediment carried by the river and deposited in the reservoir backwater. As noted in 1. above, GRDA’s own data show that the sediment in the upstream limb of the hump contains substantial quantities of sand and gravel (DWT, 2022a) (Tetra Tech, 2022), with no reason to doubt that it was delivered from the upstream river, the bed of which is also dominated by such coarse sediments.</i>	Please see GRDA’s response to Comment #82.
85	City of Miami 03/30/2023	Allegation of Flaws in Updated Sedimentation Study Report <i>GRDA’s flawed assumptions about the fate of the VFS that is carried by the river and their failure to include the coarser portion of the sediment load led GRDA to conclude that there will be little or no coarser sediment delivered to and deposited on the hump under future project operations, and that the vast majority of the fine sediment (silt/clay) load will simply pass over the hump into the downstream reservoir. As a result, GRDA erroneously concludes that the hump will not continue to evolve under future project operations.</i>	Please see GRDA’s responses to Comments #82-83.
86	City of Miami 03/30/2023	Allegation of Flaws in Updated Sedimentation Study Report <i>GRDA’s December 2022 response to the City’s comments perpetuates and amplifies these flaws. Key issues from their response are summarized below. We provide additional literature and historical support for our concerns in Section 4 of this memo.</i> <i>1. (p52, Item 2) GRDA’s assertion that there is no appreciable movement of bedload sediment (i.e., material coarser than very fine sand) in the system is incorrect.</i> <i>a. (p53, Item C) GRDA acknowledges that it...recorded several pieces of gravel and/or sand in the bedload sampling efforts, consistent with notes on the field data sheets provided with the USR. The statement that [i]t was not even a sufficient quantity to measure...is absurd. Any quantity of sand and gravel can be measured, and this material could and should have been. In addition, the very small number of measurements, and the limited range of flows over which they were measured provides an insufficient dataset to establish whether fine sand and coarser sediments are being transported by the upstream river or to develop a valid rating curve for the bedload that is moving. See Section 4 below for more discussion of this issue. U.S. Geological Survey (USGS) guidance on sampling frequency [(Edwards & Glysson, 1998), p61] notes that ...sampling frequency should be much greater during [high flow] periods. During some parts of these critical periods, hourly or more frequent sampling may be required to accurately define the trend of sediment concentration. During the remainder of the year, the sampling frequency can be stretched out to daily or even weekly sampling for adequate definition of concentration (emphasis added). Clearly, six measurements over a 24-month period is not adequate to describe the bedload transport regime of this river (or any other river, for that matter).</i> <i>b. There is overwhelming geomorphic evidence that fine sand and coarser sediment is transported into and through the upper portion of the study reach, including the presence of numerous mobile gravel bars (mostly on the insides of bends) and the additional evidence provided by GRDA’s November bathymetric survey of the Miami low-water structure [(GRDA, 2022a),App C]; see Section 4 below for more discussion]. Even GRDA’s STM that uses unreasonably coarse bed material gradations for the upper part of the reach (Tetra Tech, 2022) shows mobilization of the gravel bed under a wide range of flows. The suggestion that the bed material abruptly becomes mobile at the head of the study reach when it is immobile in the upstream supply reaches is illogical.</i>	1. Please see GRDA’s response to Comment #82. a. FERC has already approved the sampling techniques, and data was collected during a wide range of flow rates in the system. FERC has ruled there is no need for additional sampling. The effort to measure hourly or more frequently during high flow events is absurd, and it is simply unreasonable to conclude that GRDA should be required to collect daily or weekly measurements of these streams for an unknown duration to satisfy the City. b. No such “overwhelming” evidence has been produced by the City. Their perspective as presented to date is based on grab samples collected in 1996 using flawed sampling techniques that disregarded armor layers (Please see GRDA’s response to Comment #83). The mere presence of a gravel bar does not prove it is consistently mobile. Additionally, GRDA simulated increased bedload entering the system based on sediment mobility analyses at extreme flows. The results showed a total inflow of 261 million tons of sediment during the 50-year simulation. Of that, just 2 million tons (0.77%) was coarser than VFS. Material moving approximately 2.25 miles downstream of the Neosho River boundary showed even less coarse material moving, with just 0.08% of sediment coarser than VFS; the river was unable to transport it a significant distance and deposited it in the upper reaches of the system. The streams do not consistently transport coarse sediments. This finding further supports statements made in the GRDA’s response to the City’s comments submitted in December 2022; the bed mobilization cited by the City represents less than 1% of total sediment loading into the system, even under conditions most favorable to their unsupported argument. c. The issues raised in paragraph 1.c of the City’s comment are addressed above.

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		<p>c. (p53, Item D) The percentage of sand and coarser material entering and being transported in the upstream part of the study reach relative to the percentage of silt and clay is not the relevant question for purposes of the USSR. The relevant question is whether sufficient sand and gravel is carried into and deposited in the river downstream from Miami to continue building the sediment hump or other features that impede flows and affect flooding levels in the vicinity of Miami and other upstream communities. Because GRDA's STM incorrectly removes essentially all of the sand and gravel load from the channel and deposits it in the overbanks upstream from Miami, it does not provide a realistic assessment of the potential for continued building of the sediment hump. In short, the USSR does not answer the relevant question.</p>	
87	City of Miami 03/30/2023	<p>Allegation of Flaws in Updated Sedimentation Study Report GRDA's December 2022 response to the City's comments perpetuates and amplifies these flaws. Key issues from their response are summarized below. We provide additional literature and historical support for our concerns in Section 4 of this memo.</p> <p>2. (p54, Item 3) GRDA's response includes a description of additional field work following submittal of the USSR that they interpret to show that there is no bedload movement in the study reach. However, that work, as well as its original field work and its own modelling, are all consistent with multiple lines of evidence described in our November 2022 comments (DWT, 2022a) (Tetra Tech, 2022) and further amplified in Section 4, below, that bedload does, in fact, move in the study reach.</p>	Please see GRDA's response to Comment #86.
88	City of Miami 03/30/2023	<p>Allegation of Flaws in Updated Sedimentation Study Report GRDA's December 2022 response to the City's comments perpetuates and amplifies these flaws. Key issues from their response are summarized below. We provide additional literature and historical support for our concerns in Section 4 of this memo.</p> <p>3. (p53, Item 4) The bed material sampling methods and interpretation by Mussetter Engineering, Inc. (Mussetter, R.A., 1997) were appropriate and applicable to evaluating bedload transport in the Neosho River. GRDA's criticism demonstrates a troubling lack of understanding of transport processes in gravelbed systems. In their effort to support their criticism, GRDA misinterprets the meaning of selected statements from the abstract of Robert Milhous' Ph.D. dissertation (Milhous, 1973), misrepresents selected statements and Figure 4.1 from [(Bundt & Abt, 2001) p55; App C, p5; App D, p2] and ignores five decades of research on the subject since Milhous' dissertation was published. Chapter 3 of the ASCE Sedimentation Engineering manual (Parker, 2008) provides a summary of this research, beginning with the following statements regarding the original ASCE Sedimentation Engineering Manual (Vanoni, 1975): When ASCE Manual No. 54, "Sedimentation Engineering," was first published in 1975, the subject of the transport and sorting of heterogeneous sediments with wide grain-size distributions was still in its infancy...Since that time there has been a steady increase in research on the subject of the selective (or nonselective) transport of sediment mixtures. (GRDA, 2022a) cites (Bundt & Abt, 2001) to support their incorrect assertion that the bed of the Neosho River is a...relict channel ... (p12, App A). In fact, (Bundt & Abt, 2001) and the other available information clearly demonstrate that the bed of the Neosho River is mobilized under a broad range of flows. Mobile armor consists of a mobile surface layer that develops through coarsening to regulate the transport of the finer, sand fraction of the bed material load to be consistent with the gradation</p>	<p>The study cited by the City removes the coarser armor layer at the surface of the sediment and only samples the finer bed material from underneath the armor layer, which is contrary to accepted bed material sampling procedures (Bunte and Abt 2001)⁶. The City's data relies on samples from bars only, which generally consist of finer material than that found on the bed of the main channel. The City then states that GRDA has a "troubling lack of understanding of transport processes." The City denies bedload data which confirms the lack of movement of coarse sediment and conveniently ignore the fact that the vast majority of the delta feature consists of sediments finer than 0.0625 mm. It cites material which it claims supports its allegation that significant quantities of coarse sediment are being transported down the river system. But contrary to these statements, GRDA's conclusions are based on appropriately collected data as detailed in Sections 2.2.2-2.2.5 the USR (GRDA 2022)⁷. Additional information about the sediment sampling was provided in Appendices B-E of the USR.</p> <p>The City presents no data which contradicts the data collected by GRDA, advancing only theoretical discussion which is contradicted by the facts on the ground.</p> <p>Furthermore, regarding the bedload transport functions, it is important to note there are functions that define the bedload rates based on surface gradations, subsurface, and others that use both. A majority of these equations are not available in HEC-RAS. The mobile armor is derived mainly from observations of laboratory testing since it is hard to observe this in the field where there is sufficient bedload introduced into the system.</p>

⁶ Bunte, K. and S.R. Abt, 2001. *Sampling Surface and Subsurface Particle-Size Distributions in Wadable Gravel- and Cobble-Bed Streams for Analyses in Sediment Transport, Hydraulics, and Streambed Monitoring*. US Forest Service, Rocky Mountain Research Station General Technical Report RMRS-GTR-74.

⁷ Updated Study Report dated September 30, 2022 (Accession No. 20220930-5106).

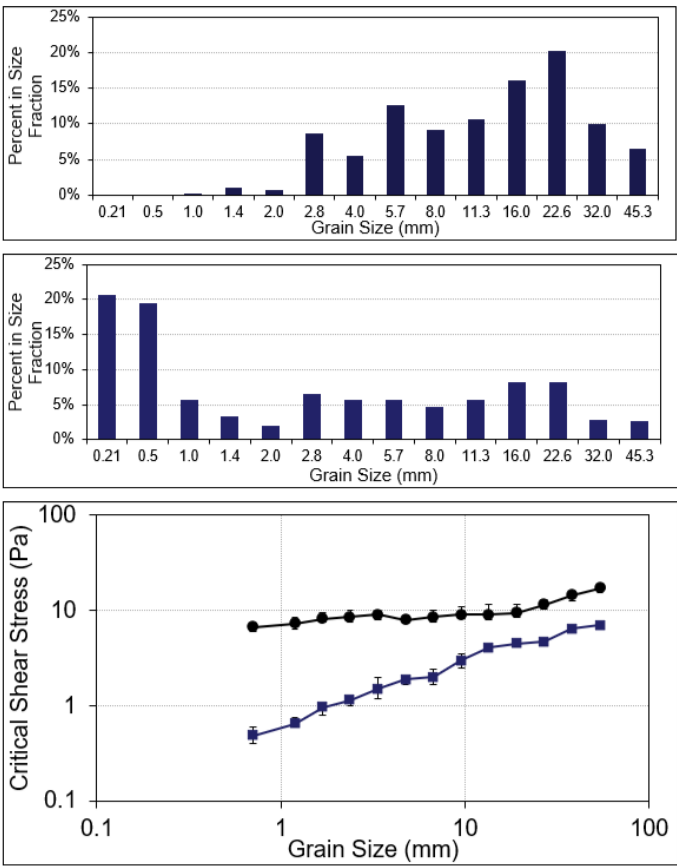
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		<i>of the upstream supply. [(Bundt & Abt, 2001) Section 3.3.1.1 (pp 130-131)]. [(Bundt & Abt, 2001)(p131)4] also address inconsistencies regarding use of the terms armor and pavement in the gravel-bed literature, and explicitly say that, for purposes of their manual, ...armor is mobile.... Finally,[(Bundt & Abt, 2001), p130] note that [t]he frequently observed similarity between the size distribution of bedload and the subsurface sediment requires that the mobility of coarse particles is increased, while the mobility of small particles is decreased. This similarity has been noted in many other studies of gravel-bed streams [e.g., (Parker, 2008) (Parker & Klingeman, 1982)], and is one of the key reasons for the sampling method used for (Mussetter, R.A., 1997).</i>	Discussions in the manual indicate that a static armor can form when there is a reduction in inflowing bedload, which has occurred in the study area according to the findings of Byerley (1995) ⁸ . Manual 54 does provide an example for one field application. It also states that equal mobility concept (or movable armor) cannot extend all the way to very coarse and very fine grains in a mixture.
89	City of Miami 03/30/2023	<p>Allegation of Flaws in Updated Sedimentation Study Report GRDA's December 2022 response to the City's comments perpetuates and amplifies these flaws. Key issues from their response are summarized below. We provide additional literature and historical support for our concerns in Section 4 of this memo.</p> <p>4. (Sect 4.2.3.1 p56) GRDA reports on a new sensitivity analysis in response to the City's November 2022 comments (DWT, 2022a), the results from which GRDA claims show that deposition of sand and gravel would still not affect sediment dynamics and flooding from the head of the reservoir to Miami. However, assuming GRDA used the same overbank deposition method in this analysis as in the STM, GRDA's sensitivity analysis has the same critical flaw that we noted in our November 2022 comments (i.e., essentially all of the VFS and coarser bedload entrained from within the upper part of the reach is deposited in the overbanks upstream from Tar Creek and very little is delivered to the river downstream from Miami—a physically unrealistic result). Unfortunately, GRDA did not provide the updated model, and specifically, the updated sediment inflow curves, that would allow Tetra Tech to verify this statement. The model run simulating GRDA's "anticipated operations" presented in the USSR predicted that approximately 16.4M tons of VFS will be deposited in the overbanks upstream from Tar Creek over the 50-year modelling period. Our preliminary analysis indicates less than 4% of this sediment would realistically be delivered to the overbanks area; thus, a correctly formulated model would deliver to and deposit nearly 16M tons more VFS in the main river channel downstream from Miami than is indicated by GRDA's analysis. Although the quantity is significantly smaller (but as yet undefined), a similar problem occurs with the coarser sand and gravel that is moving in the system. Our preliminary analysis indicates that deposition of the VFS and coarser sediment under future operations could cause the upstream limb of the sediment hump to rise by an additional few to several feet over the term of the proposed license.⁵ GRDA's analysis wrongly suggests that little or no additional deposition will occur on the upstream side of the hump under future project operations, which leads them ignore the potential for sedimentation to adversely affect flooding levels in Miami and vicinity.</p>	<p>Please see GRDA's response to Comments #82 and 86.</p> <p>In addition, Commission staff has determined that the methodology used in the STM is appropriate following similar comments received from the City and responded to by GRDA on pages 61 to 63 of its Response to Comments on Updated Study Report, Accession No. 20221229-5237. Commission staff rejected this comment by the City on page B-22 of its Determination on Requests for Study Modifications and New Studies for the Pensacola Hydroelectric Project, Accession No. 20230314-3035, so there is no reason for GRDA to respond to this issue again.</p>
90	City of Miami 03/30/2023	<p>Allegation of Flaws in Updated Sedimentation Study Report GRDA's December 2022 response to the City's comments perpetuates and amplifies these flaws. Key issues from their response are summarized below. We provide additional literature and historical support for our concerns in Section 4 of this memo.</p> <p>5. (p60, Item 2) GRDA's claim to have used...standard, accepted practices in building the STM...is a façade that obscures the fatal flaws in the analysis. Simply stated, the vast majority of the VFS and coarser sediment moving in the Neosho River study reach does NOT deposit in the overbanks upstream from Tar Creek. GRDA points to no field evidence or physical mechanism in support of its model results suggesting otherwise. The vast majority of the coarser sediment remains in the main river channel through Miami</p>	<p>Commission staff has determined that the methodology used in the STM is appropriate following similar comments received from the City and responded to by GRDA on pages 61 to 63 of its Response to Comments on Updated Study Report, Accession No. 20221229-5237. Commission staff rejected this comment by the City on page B-22 of its Determination on Requests for Study Modifications and New Studies for the Pensacola Hydroelectric Project, Accession No. 20230314-3035, so there is no reason for GRDA to respond to this issue again.</p> <p>In addition, please see GRDA's response to Comment #89 and the further response below:</p>

⁸ Byerley, R. D., 1995, Chert gravel sources, hydrology, transportation, and deposition within the lower Neosho River, southeastern Kansas: M.S. thesis, Emporia State University, 79 p.

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		<p>where it contributes to building of the hump (see Item 3 above). HEC-RAS includes several options to control overbank sedimentation that can be...standard, accepted practice...when used in appropriate situations [U.S. Army Corps of Engineers (USACE, 2023), pp100-115]. As detailed in our November 2022 comments (DWT, 2022a), the overbank deposition option used by GRDA is clearly inappropriate, lead to physically unreasonable and incorrect modelling results and essentially ignores potential future adverse flooding impacts associated with the Project.</p>	<p>Tetra Tech (2015)⁹ indicates that “Based on the 1940 and 2015 bed elevation profiles, sediment deposition has caused the river bed to raise (i.e., aggrade) by an average of about 5 feet, with over 10 feet of aggradation in some locations, in the 6- to 7-mile reach upstream from Twin Bridges/U.S. Highway 60. Based on the elevations along the tops of the channel banks, up to 15 feet of sediment deposition has occurred in the overbanks along this portion of the reach.” The overbank gradations indicate that VFS <i>does</i> exist in the overbank areas.</p> <p>Many cross sections indicate the veneer deposition method is reasonable. The diffusion method proposed by the City requires two additional parameters with limited data available to define them. Particularly given the uncertainty associated with the underlying terrain datasets, attempting to calibrate the diffusion method with any confidence would be challenging to impossible.</p>
91	City of Miami 03/30/2023	<p>Allegation of Flaws in Updated Sedimentation Study Report GRDA’s December 2022 response to the City’s comments perpetuates and amplifies these flaws. Key issues from their response are summarized below. We provide additional literature and historical support for our concerns in Section 4 of this memo.</p> <p>6. (Sect 4.2.3.3) As discussed in our November 2022 comments (DWT, 2022a), GRDA used a highly inappropriate boundary condition for Tar Creek in the STM that ignores the effect of water-levels in the Neosho River on hydraulic conditions in Tar Creek. Because of this error, the amount of flooding and deposition of potentially contaminated sediments in the Tar Creek overbanks is grossly underestimated in the STM. As a result, we requested that FERC direct GRDA to correct the error. In their response to our request, [(GRDA, 2022a), p62-64] asserts that they...followed USACE best practices...in developing the STM geometry and listed three possible options for representing the junction of Tar Creek with the mainstem Neosho River, along with a justification for selecting the clearly inappropriate option used in their modeling. In reality, GRDA could have more correctly modelled Tar Creek dynamics quite easily by applying the modelled water-surface elevations in the Neosho River at the mouth of Tar Creek from initial runs as a temporal input record in subsequent runs in lieu of the normal depth method that was used. Although a small amount of uncertainty would initially remain due to the interaction of Tar Creek sediment inflows with water-surface elevations in the river, these effects are likely very small (reflecting the relatively small contribution of Tar Creek to bed material load in the river below the confluence) and the uncertainty could be essentially eliminated with only a few iterations of runs.</p>	<p>As the City is aware, GRDA is currently in the process of addressing this issue, as directed by FERC in its Determination on Requests for Study Modifications and New Studies for the Pensacola Hydroelectric Project, pages B-9 to B-13. Accession No. 20230314-3035.</p>
92	City of Miami 03/30/2023	<p>Allegation of Flaws in Updated Sedimentation Study Report GRDA’s December 2022 response to the City’s comments perpetuates and amplifies these flaws. Key issues from their response are summarized below. We provide additional literature and historical support for our concerns in Section 4 of this memo.</p> <p>7. (Sect 4.3.2.5) GRDA’s response to our criticism of the randomized future flow record misrepresents the main thrust of our criticism. We did not recommend a Monte Carlo simulation for the future conditions STM runs. While a properly-conducted Monte Carlo simulation would help quantify the uncertainty in the modelling results, we recognize that it would be impractical for such a large model that takes many hours to run for even a single condition. Our point was that GRDA’s use of the single randomized flow sequence implies a level of scientific rigor that is not real. Using only one randomized sequence of flow years provides no new information and likely obscures any longer-term cycles or trends in the natural flows.</p>	<p>Commission staff has determined that the methodology used in the STM is appropriate following similar comments received from the City and responded to by GRDA on pages 70 to 73 of its Response to Comments on Updated Study Report, Accession No. 20221229-5237. Commission staff rejected this comment by the City on page B-22 of its Determination on Requests for Study Modifications and New Studies for the Pensacola Hydroelectric Project, Accession No. 20230314-3035, so there is no reason for GRDA to respond to this issue again.</p>

⁹ Tetra Tech, 2015. *Hydraulic Analysis of the Effects of Pensacola Dam on Neosho River in the Vicinity of Miami, Oklahoma*. Prepared for City of Miami. December 9, 2015.

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		<i>Applying the flow years in the order in which they actually occurred would have been a more technically sound approach.</i>	
93	City of Miami 03/30/2023	<p>City of Miami Reanalysis Plan <i>Based on the above issues, Tetra Tech will correct the errors and questionable judgment calls in GRDA's STM and apply the corrected STM along with other available information to re-evaluate the likely effects of sedimentation on flooding conditions in the vicinity of the City under future operating conditions. The following specific tasks will be performed for this analysis:</i></p> <ol style="list-style-type: none"> <i>1. Extract modelled water-surface elevations at the mouth of Tar Creek from GRDA's STM runs for input as the boundary conditions for initial STM runs.</i> <i>2. Revise the geometry in the pre-dam, calibration STM.</i> <i>3. Using the available bed-material data, develop inflowing sediment rating curves for the Neosho River and modelled tributaries that includes material coarser than VFS.</i> <i>4. Re-run the modified STM calibration model using the updated Tar Creek boundary condition, the updated inflowing sediment rating curves and an appropriate overbank sedimentation method. Compare the model results with the measured pre- and post-dam topography.</i> <i>6. If necessary, adjust the inflowing sediment rating curves to improve agreement between the calibration model results and measured deposition quantities.</i> <i>7. Apply the updated sediment rating curves and appropriate overbank sedimentation method to the future conditions STM. In these runs, GRDA's randomized, future-conditions annual flow sequence will be replaced with the actual flow sequence. We will also run the model using GRDA's randomized sequence to assess whether it makes a substantive difference in the results.</i> <i>8. Use the STM results along with other available information to assess the potential magnitude of future project-induced sedimentation impacts on flooding in the vicinity of Miami and other upstream communities.</i> 	Please see GRDA's response to Comment #73.
94	City of Miami 03/30/2023	<p>General Comments <i>GRDA's opinions about the lack of bedload transport in the Neosho River appear to be based primarily on information provided in the Neosho River Sediment Transport Technical Memo [(GRDA, 2022a), Appendix D].</i></p> <p><i>The third full paragraph on page 12 summarizes the central (and technically flawed) theme of the memo:</i> <i>The Neosho River can be considered a relict/non-fluvial river, or at least exhibiting relict/nonfluvial tendencies because the upper riverbed is armored and the riverbed consists of material which was deposited in the post-glacial era, the riverbed material rarely is transported and there is no longer any supply of gravel that previously existed prior to the construction of John Redmond Reservoir.</i></p> <p><i>This theme is fundamentally flawed for many reasons, of perhaps most importance, its failure to recognize the difference between mobile and static armor. Mobile armor consists of a coarse surface layer that is maintained even when all sizes present in the bed are mobile, while static armor implies that the bed surface is a relict form in which the bed material is rarely, if ever, mobilized [(Parker & Toro-Escobar, 2002); (Buffington & Montgomery, 1997); (Parker, et al., 1982); (Parker & Klingeman, 1982)]. GRDA argues that the bed of the Neosho River upstream from Miami consists of a static armor (or pavement). The statements from (Milhous, 1973) and (Bundt & Abt, 2001) misleadingly cited by GRDA do not support GRDA's opinion and the geomorphic evidence shows the opposite. The statements from (Milhous, 1973) simply mean that the coarse surface layer must be mobilized before the finer material in the subsurface can be accessed by the flow. This occurred in the armored bed of Oak Creek where the data for (Milhous, 1973)</i></p>	<p>Please see GRDA's responses to Comments #82, 83, and 86.</p> <p>The incipient motion calculations at RS 145.09 shows the bed at this location can be considered a static bed for the full range of flow conditions evaluated (D50 remaining stable). However, the bed material can potential be mobile for high flows when using RS 152.25. The incipient motion calculations took into account the potential reduction in grain shear stress for form or other potential losses and used only the shear stress acting on the grain. There is no agreement on this adjustment, and they are actually not considered by several researchers.</p> <p>Wilcock and Crowe is the only sediment transport method available in HEC-RAS that accounts for the mobile bed and hiding. However, the Sediment Transport users manual states the following, "The Wilcock and Crowe approach is distinct from the other transport functions because [it] include[s] a hiding equation that accounts for grain class inter-dependence. When a single grain size is used to represent the sediment mixture, the transport equation assumes the same reference shear stress will mobilize all the sizes. This is accurate for very well mixed sediments but becomes less accurate as a sediment grain size distribution develops. In the figures shown below, the grain size distribution of the bed sediment shown in brown (graph A below) is well mixed (or poorly sorted) and the grain size distribution of the bed sediment shown in brown (graph B below) is poorly mixed (well sorted). Both are representative of natural gravel and sand river systems. The influence of mixture on grain inter-dependence causes the sizes in the brown mixture to mobilize at a similar critical shear stress for all but the largest grains. In graph C below, the critical shear stress curve is near flat until the largest size fractions. In contrast, the green sediment, which is poorly</p>

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		<p>were collected, when flow conditions were sufficient to mobilize the D65 (particle size for which 65 percent of the surface bed material is finer).</p> <p>Subsequent research on many other gravel bed streams shows that bed mobilization typically occurs when the flows are capable of mobilizing the median (D50) size, at which point essentially all sizes in the bed are available for transport. This process is often referred to in the literature as “equal mobility” [(Parker, 2008); (Parker & Toro-Escobar, 2002); (Church, et al., 1991)]; the simple explanation for which is that particles coarser than the D₅₀ are more exposed to the flow than smaller particles, and therefore, are more mobile than they would be in a bed of uniform sizes. Conversely, the smaller particles tend to be sheltered by the larger particles, making them less mobile. This process has been incorporated into many bed load transport equations dating back to (Einstein, 1950), and it is an important component of many of the more-recently published bed load transport equations [e.g., (Wilcox & Crowe, 2003); (Hunziker & Jaeggi, 2002); (Parker, et al., 1982); (Ashida & M., 1972)], some of which are available in HEC-RAS. The MPM-Toffaleti transport function used in GRDA’s STM does not explicitly account for these processes, although the overall structure of the sediment sorting algorithms in HEC-RAS do approximate the surface coarsening process to a limited degree.</p> <p>Indeed, GRDA’s own sediment transport modelling shows that the fine-sand and gravel fraction of the bed material is mobile in the upper end of the study reach over a broad range of flows. As we noted in our November memorandum [(Tetra Tech, 2022), Item 3.c, p4], GRDA’s modelling shows this effect despite GRDA’s use of unreasonably coarse bed material gradations as starting conditions in the upper reaches of the model. If anything, those coarse gradations should make the bed material less likely to be transported in the model than in reality. During the October 13, 2022 USR technical conference, GRDA’s STM study lead appeared unaware that the model indicated mobilization of the coarse bed materials used for the initial condition in the upper modelled reach of the Neosho River at flows as low as a few hundred (not hundred thousand) cubic feet per second (cfs).</p>	<p>mixed / well sorted, has a much larger range of critical shear stresses at which the different grain size fractions mobilize. Transport of the brown sediment could be reasonably approximated using the d50 grain size and a single critical shear stress value. Transport rates for the green sediment require grain size specific calculations. The Wilcock and Crowe model accounts for this inter-dependence and sensitivity of critical shear stress on grain size mixture through a hiding factor that explicitly incorporates grain size.</p>  <p>A) bed surface with a well-mixed grain size distribution and small amount of sand on the surface.</p> <p>B) bed surface with a poorly mixed grain size distribution and larger amount of sand on the surface.</p> <p>C) measured critical shear stresses for each grain size fraction in the two mixtures.”</p>
95	City of Miami 03/30/2023	<p>General Comments</p> <p>As further supporting evidence, GRDA’s “anticipated operations” STM run shows transport rates for the fine sand through gravel fraction (i.e., excluding the VFS that they acknowledge is transported in significant quantities) ranging from more than 1 ton per day at discharges as low as 280 cfs to about 430 tons per day at 19,700 cfs at a typical cross section near the upstream end of the reach [Cross Section (and river mile) 146.58] (Figure 1). As clearly shown in Figure 1, these higher transport rates occur primarily during the beginning of the simulation when the initially-specified bed sediment reservoir still contains a substantial amount of mobile material. After the first five to six years of the simulation, the bed sediment reservoir is depleted and the transport rates are unreasonably low. If a reasonable fine-sand through gravel supply had been included in GRDA’s STM runs, the pattern of transport seen in the first few years of the simulation would continue throughout the simulation and a substantially larger load of this material would have been carried downstream into the deposition zone at the head of the reservoir. GRDA has offered no rebuttal to this evidence from its own model that coarse bed material is mobile in the reaches above and</p>	<p>The inconsistencies at the upstream end of the model are likely associated with how the model is handling the VFS load. GRDA does not agree with the suggestion that the bed sediment reservoir is being depleted by the end of the run. This typically occurs when there is pronounced scour, so the reduction in mass out (per the City’s figure) is likely due to armoring of the bed surface. A review of the particle distribution of the bed surface coverage could indicate whether or not this is the case.</p> <p>Gravel bars being active geomorphic features is unsubstantiated. GRDA’s conclusion is not refuted by the mere presence of gravel deposits. The aerial photos do not prove that they are active geomorphic features made up of sediment that is being transported into the reach from upstream by modern-day flows. It only shows that they existed in that location at the time of the photo.</p> <p>The Byerley (1995)¹⁰ study found that the geomorphic history of the Neosho River shows that in the past, the flows and contributing drainage area to the Neosho River were larger and included access and supply of</p>

¹⁰ Byerley, R. D., 1995, Chert gravel sources, hydrology, transportation, and deposition within the lower Neosho River, southeastern Kansas: M.S. thesis, Emporia State University, 79 p.

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		<p>through Miami in response to the USR comments—despite the fact that Tetra Tech presented the issue both in the USR technical conference and in its memorandum on the STM attached to the City’s written USR comments (DWT, 2022a).</p> <p>Both Figure 4.1 [(GRDA, 2022b), App A, p2], that GRDA copied directly from (Bundt & Abt, 2001) along with the figure number and caption, and shows the stratigraphy of an armored bed and the photographs on pages 3 and 4 of GRDA’s technical memo are completely consistent with a mobile armor in which the surface layer is coarser than the bulk subsurface material (Parker, 2008). These photos are also consistent with similar photos taken by Dr. Mussetter in 1996 [see (Tetra Tech, 2022), Figure E] and a more recent photo taken by Dr. Thomas in a similar location (Figure 2). The photos of core samples collected by GRDA and provided in Appendix C of GRDA’s December 2022 response also show the coarse surface layer. Gravel point bars, including those sampled by Drs. Mussetter and Thomas, are visible throughout the study reach upstream from Miami in all of the historical aerial photos available from Google Earth and other sources that were taken at low flows (e.g. Figure 3, Figure 4, Figure 5). Contrary to GRDA’s assertions, these gravel bars are active geomorphic features that are made up of the sediment being transported into the reach from upstream by modern-day flows.</p>	<p>gravel from the Flint Hills region which used to be transported down the Neosho River. Geomorphic changes over recent geologic time resulted in the current basin configuration which contributes less flow and sediment to the Neosho River. Based on these factors, coupled with the complete cutoff of gravel sources from the watershed upstream of John Redmond Reservoir, these gravel bars are the remnants of what is now the significant tendencies of the current relict/non-fluvial condition of the Neosho River.</p> <p>The STM was set up and calibrated using standard approaches consistent with the study plan. The STM reasonably simulates channel changes over time by comparisons to channel geometry surveys. Any model may or may not represent isolated, specific instances which may or may not be realistic, given that all models are simplifications of very complex physical processes; nonetheless, the STM produces reasonable results that are consistent with geomorphic and quantitative analysis as part of the three-level approach outlined in the study plan.</p> <p>The overall magnitude of coarse sediment moving in the model is very small compared to the overall transport of fine sediment, which is dominant – as demonstrated by the suspended sediment data.</p>
96	City of Miami 03/30/2023	<p>Bedload Transport <i>The memo also sharply criticizes Tetra Tech for ...continually mischaracteriz[ing] ...the lack of bedload sediment in the [STM?] model as an “assumption” by...GRDA [(GRDA, 2022a) 1st sentence], and claims that GRDA ...has repeatedly provided original field measurements and comprehensive modeling documentation to support their assertions..., while ...the City has not (p1, para 3). The memo also states that [t]he City has not measured bedload transport and instead relies on biased judgment to form the opinion that because gravel is present on the bed, it must also be moving, despite all evidence suggesting otherwise (emphasis added). In fact, GRDA’s assertion about the lack of bedload movement in the Neosho River is a flawed assumption that appears to be based primarily on only six attempted bed load measurement events, two of which were conducted at relatively low flows (2,330 cfs and 2,930 cfs), and two of which were collected at flows well-below the bankfull discharge (15,500 cfs and 18,900 cfs). As noted above, even GRDA’s modelling shows that bed load moves at flows as low a few hundred cfs.</i></p> <p><i>In addition to the other geomorphic evidence, GRDA’s surface sediment samples show that the upstream limb (~RM 112 to RM 130) of the sediment hump that clearly formed after construction of the Pensacola Dam contains substantial sand and gravel⁹. GRDA provides no evidence for the source of this material if it was not carried into the reach and deposited by the river, despite their lengthy and misleading discussion of other potential causes of the hump.</i></p> <p><i>Observations by Mr. Jack Dalrymple—a longtime resident and riverfront property owner near Miami, as well as a licensed professional engineer—provide further anecdotal evidence for substantial transport of sands and gravels by the river upstream from Miami. According to Mr. Dalrymple, he is aware of at least one instance several decades ago when a significant amount of material was excavated from the gravel bar on which Dr. Mussetter’s 1996 samples were collected (and the photo in Figure 2 was taken) for use as fill material, leaving a substantial depression in the bar (J. Dalrymple, personal communication, December 2022). He further stated that this depression was completely filled in during the following high flow event.</i></p>	<p>Please see GRDA’s responses to Comment #82, 83, and 86.</p> <p>In addition, it bears noting that the City is using self-identified and self-serving anecdotal evidence to support its claims. No data were provided to document this observation. When an excavation occurs in a river bed, it typically results in steep local slopes immediately adjacent to the hole that are unstable and can subsequently fail and fill in the localized excavation. This is a more plausible explanation of the anecdotal statement and the City does not provide any information to suggest otherwise.</p> <p>Unlike Byerley (1995)¹¹, the City has not studied the sources of coarse sediment to the lower Neosho River and is incorrect in its conclusions.</p>

¹¹ Byerley, R. D., 1995, Chert gravel sources, hydrology, transportation, and deposition within the lower Neosho River, southeastern Kansas: M.S. thesis, Emporia State University, 79 p.

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97	City of Miami 03/30/2023	<p>Low Head Dam <i>In late-2022, GRDA performed a bathymetric survey of the low-head structure that crosses the river at about RM 135.3, adjacent to the City of Miami’s Riverview Park and approximately 1,000 feet downstream from the Highway 125 Bridge, as well as the surrounding river bed. Their technical memo asserts that the...dam extends about 6 feet above the bed since the riverbed is about 6 feet lower than the crest of the dam (p8), and they further assert that this confirms that no bedload is being transported by the river because, if it was, the pool upstream from the dam would be filled with sediment. The available information, including GRDA’s bathymetric map (reproduced here as Figure 6) actually provide further evidence that substantial bedload does moving in the system.</i></p> <p><i>It appears that GRDA’s mistaken conclusions from its bathymetric study stem from a lack of understanding about the low-water structure itself. The original purpose of the structure was to provide pedestrian access to the parks on either side of the river and facilitate fishing during low-flow conditions (J. Dalrymple, personal communication, December 2022). It was constructed with numerous arch-shaped openings to allow water and sediment to pass through. What GRDA refers to as the “crest” of the “dam” is actually a walking surface for pedestrian access across the river during low to moderate flows. The structure below is not solid, but consists of two rows of open arches, the bottom of which are about 4 feet high and top 18”-20” high (Figure 7 and Figure 8). Except at the lowest flows, water appears to have passed through a trash rack spanning the upstream face of the dam along the open arches (visible on the upstream face of the dam in Figure 9, (as well as in other historical photographs not included) and through the lower arches. Because they are blocked by sediment and other debris, the low flows now pass through a single constricted opening (possibly a fish ladder) near the right bank (Figure 10). The deep (dark blue) areas shown in GRDA’s mapping (Figure 6) along the right (west) side of the river up- and downstream from the structure are consistent with scour caused by the increased velocities through the single opening. A longitudinal profile through the structure digitized along the orange line in Figure 6 show these scour holes (Figure 11). A similar profile along the blue line in Figure 6 shows that bed upstream from the structure has filled in to nearly top of the lower arch openings, at least 3 feet to 4 feet above the level when the structure was constructed. This line also shows the deep area downstream from the structure caused by scour during high flows passing over the structure. The 1992 low-flow photograph (Figure 10) shows a large gravel bar that extends of at least 2/3 of the channel width along the left (east) side of the river. This bar is about the same location as the scour hole surveyed by GRDA in 2022. The scour holes, infilling of several feet of sediment upstream from the structure and formation and erosion of the downstream gravel bar all clearly show that sand and gravel are being moved by the Neosho River in this part of the study reach.</i></p> <p><i>In sum, GRDA’s bathymetric data is indeed useful. Unfortunately, GRDA’s analysis of these data relies on assumptions made in fundamental ignorance of the actual structure of the low water “dam.” Taking into account its true structure and historical photographic evidence of sedimentation, GRDA’s bathymetric data in fact provides powerful evidence that the bed material has always been and remains mobile, at least in response to high flows expected to recur at intervals of a few years.</i></p>	<p>In observing a significant number of small dams, sediment is virtually always deposited upstream of the structure if the river is transporting significant quantity of bedload sediment. Designing a system where the bedload is consistently passed through the structure has been met with limited success. It is rare to find systems where sediment deposition is not an issue, with the exception of cases where there is limited bedload sediment transport. Even with gates or openings in the structures, sediment still tends to deposit upstream of the dams. The only feasible way to have 100 years of operation with such insignificant deposition upstream of the dam is that there is very little coarse sediment moving downstream, consistent with field measurements and the findings of Byerley (1995)¹². GRDA’s analysis does not rely on ignorance of the dam but rather considerable experience with sediment deposition upstream of small dams and bedload data.</p> <p>A limited quantity of large, coarse-grained sediment moved downstream between construction of the lowhead dam and the opening of John Redmond Reservoir. As it moved downstream, it encountered the lowhead dam at Riverview Park, blocked the archways, and gradually accumulated upstream of the structure. When John Redmond opened, gravel transport essentially ceased in this reach of the Neosho River, as discussed by Byerley (1995).</p> <p>Figure 9 from the City’s comment shows coarse sediment immediately upstream of the dam along virtually the entire width of the stream. Immediately upstream of the ridge of sediment, there is an area of open water that remains unfilled with coarse sediment. This material could be an artifact of construction of the dam, or it could indicate the very limited quantity of coarse sediment being transport – possibly prior to the construction of John Redmond Reservoir. If there was sufficient coarse material to create that ridge, it should also have filled in the area of open water upstream of the ridge. The City offers no explanation for why the scour would occur in that fashion. If, as the City posits, there was significant bedload transport, that area should also have filled with sand and gravel to match the elevation of bed material against the dam as is found upstream of small dams in rivers where a significant quantity of coarse sediment is actually transported.</p> <p>Instead, Figure 9 shows that the bed appears to be largely unchanged from the present-day geometry, as noted by the City. These images are “consistent with the contours shown in GRDA’s bathymetry,” which means this photo does not present conclusive evidence that there is meaningful bedload transport and actually support GRDA’s conclusions.</p> <p>The hydraulic bed shear stresses in the reach influenced by the Miami Dam are also generally lower than those at the upstream end of the STM where sediment is introduced. The available channel bed surveys show little to no change in the reach upstream of Miami; if there was considerable coarse bedload transport, it should deposit somewhere upstream of the dam. That is not reflected in the available datasets.</p> <p>In addition, it is difficult to make any substantive conclusions based on the undated photos provided by the City. However, general comments for each photo are provided below:</p> <ol style="list-style-type: none"> (1) Figure 7 shows pronounced head differential with little flow through the low-water arches. Therefore, there must have been something upstream of the dam limiting flow. It shows the lower portion of the structure completed and work has commenced on the upper portion, so it is difficult to understand why the contractor would be limiting flow through the lower arches. (2) Figure 8 shows a bar downstream of the structure that may have contributed to the washout. There appears to be minimal flow through the arches and a significant pond upstream, which indicates there may be a wall or other obstruction preventing that flow.

¹² Byerley, R. D., 1995, Chert gravel sources, hydrology, transportation, and deposition within the lower Neosho River, southeastern Kansas: M.S. thesis, Emporia State University, 79 p.

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			<p>(3) Figure 9 shows trash racks with no indication of their installation date. No photos show the upstream area at the time of construction, so it is impossible to conclude that material is being transported in that area. Abraded and damaged concrete can be attributed to water flowing over the structure and/or poor concrete material.</p> <p>(4) Figure 10 shows a large, deposited bar downstream of the dam in approximately the same location as the deposit shown in Figure 8. It isn't clear that this is different material as opposed to a static feature that remained largely unchanged between the two photos.</p> <p>(5) Figure 12 does not provide sufficient evidence to evaluate the downstream conditions. It appears that there is water downstream, which obscures any view of the area.</p> <p>GRDA's findings are not based on isolated, unsupported narratives about what could <i>theoretically</i> have happened or could happen. They are based on literature reviews, sediment transport measurements, sediment grab- and core sample assessments, qualitative and quantitative analyses, and modeling outputs. After evaluating a large range of data, all the evidence leads to the same results: there is no significant bedload sediment transport in this system. While GRDA has presented its case with relevant supporting data, the City's tactic has been to obfuscate the matter only through speculative, anecdotal, and unsupported allegations.</p>
98	City of Miami 03/30/2023	<p>Effects of John Redmond Dam on Upstream Coarse Sediment Supply <i>GRDA's December 2022 Technical Memo includes a section describing the study by (Byerly, 1995)10 regarding chert gravel sources to the Neosho River in southeastern Kansas and the effects of John Redmond Dam (JRD) on those sources. GRDA uses that information to assert that...the coarse sediment supply [to the study reach] has been cut off due to John Redmond Reservoir... (p6) and this supports their overall theme that...the lower Neosho River rarely experiences any movement of coarse sediment because of the lack of supply of these sizes and armoring (p12). According to the USGS, Flow [is] regulated to some extent since 1963 by John Redmond Reservoir in Kansas, 190 mi upstream, although our evaluation of the flow records suggest that the effect is very subtle. JRD also appears to have substantially decreased suspended loads (primarily in the silt/clay size ranges) in the study reach (USSR, Figure 80). Although JRD has undoubtedly effectively cut off the sand and supply to the Neosho River immediately downstream from the dam, it is highly unlikely to have had any substantive effect on the availability of sand and gravel reaching the study reach. JRD is located 190 miles upstream from Commerce and over half (~2,900 mi2) of the 5,926 mi2 total drainage area at the Commerce gage is downstream from JRD, providing a very large reservoir of pre-existing in-channel sediment that has not been depleted and a large supply area for newly-introduced sediment. As a result, JRD is highly unlikely to have had any substantive effect armoring and the transport of fine sand and coarser material in the Neosho River bed in the study reach ranges) in the study reach (USSR, Figure 80). Although JRD has undoubtedly effectively cut off the sand and supply to the Neosho River immediately downstream from the dam, it is highly unlikely to have had any substantive effect on the availability of sand and gravel reaching the study reach. JRD is located 190 miles upstream from Commerce and over half (~2,900 mi2) of the 5,926 mi2 total drainage area at the Commerce gage is downstream from JRD, providing a very large reservoir of pre-existing in-channel sediment that has not been depleted and a large supply area for newly-introduced sediment. As a result, JRD is highly unlikely to have had any substantive effect armoring and the transport of fine sand and coarser material in the Neosho River bed in the study reach.</i></p>	Please see GRDA's response to Comment #96.

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99	LEAD 04/03/2023	<i>At the outset, it must be noted that granting GRDA's request to increase the lake levels would keep the lake level between three feet below flood stage up to flood stage year-round as a usual norm. This would increase the chances of more frequent flooding events happening, thereby exposing the community and the environment to a higher risk of recontamination of heavy metals found throughout the Grand River watershed.</i>	<p>As an initial matter, GRDA is not requesting that the Commission authorize any increased lake levels, as maintained by LEAD. In NDAA 2020, Congress removed any authority for the Commission or any other agency to regulate water surface elevations at Grand Lake, except in limited circumstances. Please see GRDA's response to Comments # 22, 55, and 59. Thus, the rule curve currently required under Article 401 of the existing license will simply expire once the new license becomes effective, and the new license will not contain any reservoir level requirement, as NDAA 2020 directs. <i>See</i> NDAA 2020 § 7612 (b)(2)(A)(i). Any change in reservoir levels that occurs as a result of Congress' prohibition under NDAA 2020 is not within FERC's purview and not part of the proposed action. For more information, please see GRDA's response to Comment #22.</p> <p>Moreover, LEAD's factual allegations are wrong. Please see GRDA's response to Comment #73.</p> <p>Finally, LEAD fails to also acknowledge work done by its own research partners (Harvard School of Public Health & Wellesley College) after the 2007 flood, mentioned in their "Disasters Flood & Ice" publication on page 76 (Submitted by Ben Loring).</p> <p>"Locations throughout Miami and the floodplain of Grand Lake were sampled for metals from newly deposited material from Tar Creek and the Neosho River. Soil Samples were measured using a field-portable x-ray fluorescence unit and a laboratory based XR instrument. Results: Metals concentrations generally were below levels of health concern. Flood deposits farther up Tar Creek generally had higher zinc and lead concentrations than locations where the flood deposits were primarily from the Neosho River."</p>
100	LEAD 04/03/2023	<i>Under the FPA, GRDA is responsible for the operation of the Dam for the generation of hydroelectric power. However, Dam operation also involves the management of flood control operations, which is regulated under the Flood Control Act (FCA). The FCA entrusts the U.S. Army Corps of Engineers (USACE) with managing flood control operations of dams that are owned and operated by the federal government. For the Dam, this means shared responsibility between GRDA and USACE, as outlined in the 1992 Pensacola Reservoir Water Control Manual (Water Control Manual), which is also discussed further in Section II.A.</i>	GRDA agrees with LEAD that USACE has exclusive jurisdiction over flood control at the Project. This exclusivity is established not only by the Flood Control Acts of 1938, 1941, and 1944, but also by NDAA 2020. Please see GRDA's responses to Comments #55 and 59.
101	LEAD 04/03/2023	<i>Time after time—including in the DLA—GRDA has attempted to use Section 7612(c) of the Pensacola Act as a shield to abdicate its responsibilities for public health, safety, and the environment, ignoring the community's immense losses and suffering that have been exacerbated by Dam operations. GRDA's assertion that it need not evaluate the full extent of the Dam's operational conditions is unpersuasive and unsupported by the Pensacola Act, included in the 2020 National Defense Authorization Act (NDAA).</i>	<p>LEAD's comment ignores the overwhelming scientific and historic record in this proceeding demonstrating that its operation of the Project does not cause or exacerbate any public health, safety, or environmental conditions attributable to flooding. Please see GRDA's response to Comment #73. For these reasons, even in the hypothetical absence of NDAA 2020, it would be inappropriate for the Commission to impose any license conditions related to flooding, as the Commission has held that there is no basis for requiring mitigation measures in the absence of a showing that the project harms a resource or that the mitigation measure would have any appreciable benefit. <i>E.g., Wis. Power and Light Co.</i>, 94 FERC ¶ 61,294 (2001).</p> <p>As to LEAD's complaint that GRDA is using NDAA 2020 as a "shield," GRDA is only asserting that the Commission and other federal and state regulators must follow the plain requirements of that statute. GRDA cannot be faulted by asking the Commission and other federal and state regulators to adhere to these statutory requirements. Please see GRDA's response to Comment #55.</p> <p>With regard to LEAD's comments on evaluating the "full extent of the Dam's operational conditions," Commission staff has already determined this matter on page B-9 of its Determination on Requests for Study Modifications and New Studies for the Pensacola Hydroelectric Project, Accession No. 20230314-3035:</p>

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			<p>“GRDA has met the requirements of the approved study plan with respect to the modeling of a range of scenarios and reporting the results. The information provided is sufficient for an analysis of a realistic range of operational alternatives. Therefore, we do not recommend that GRDA be required to analyze a wider range of operational alternatives.”</p> <p>Accordingly, there is no reason for GRDA to again respond to this issue, which Commission staff has already decided.</p>
102	LEAD 04/03/2023	<i>As LEAD Agency has previously identified, the Pensacola Act does not affect FERC’s ability to enforce current license provisions, including obtaining lands or flowage easements that are caused by Dam flooding...</i>	The Commission has never determined that the approximately 13,000 acres at issue in the City of Miami’s complaint are necessary and appropriate for the Project. Thus, there is no license provision for the Commission to enforce on this issue. Please see GRDA’s response to Comment #57.
103	LEAD 04/03/2023	<i>Under the FPA, FERC may impose new and updated conditions during the relicensing process to protect public health and safety, including to address flooding concerns. Indeed, the FPA and the Pensacola Act, when read together, require FERC to address upstream flooding.</i>	<p>LEAD’s argument that FERC has authority to impose license conditions to address “flooding concerns” must be rejected based on Congress’ directives under the Flood Control Acts of 1938, 1941, and 1944, as well as § 7612 of NDAA 2020. The specific direction provided in these statutes is controlling over the general requirements of the FPA. It is a “basic principle of statutory construction that a specific statute . . . controls over a general provision . . . particularly when the two are interrelated and closely positioned.” <i>Adirondack Med. Ctr. v. Sebelius</i>, 740 F.3d 692, 698-99 (D.C. Cir. 2014) (citing <i>HCSC-Laundry v. United States</i>, 450 U.S. 1, 6 (1981); <i>Bulova Watch Co. v. United States</i>, 365 U.S. 753, 761 (1961)). LEAD’s attempt to “read together” the requirements of the FPA and the Pensacola Act as “requir[ing] FERC to address upstream flooding” would render meaningless several provisions in NDAA 2020, including sections 7612(b)(2) and 7612(b)(3)—as well as section 7 of the Flood Control Act of 1944. LEAD’s interpretation of these laws, therefore, undermines another canon of statutory construction “to harmonize the provisions and render each effective.” <i>Adirondack Med. Ctr.</i>, 740 F.3d at 699 (citing <i>Morton v. Mancari</i>, 417 U.S. 535, 551 (1974)).</p> <p>The better interpretation of these statutes—i.e., section 7 of the Flood Control Act of 1944, NDAA 2020 § 7612, and the Commission’s conditioning authority under FPA section 10 of the FPA—is that they are “irreconcilably conflicting” with respect to the delegation of authority to impose reservoir level requirements. <i>Detweiler v. Pena</i>, 38 F.3d 591, 596 (D.C.Cir.1994) (citing <i>Watt v. Alaska</i>, 451 U.S. 259, 266, (1981)). To the extent the FPA authorizes the Commission to impose license conditions relating to water surface elevations at the Project, section 7 of the Flood Control Act and NDAA 2020 § 7612 prohibit the Commission from imposing any such condition. Thus, under basic principles of statutory construction, the more specific statutes—here, section 7 of the Flood Control Act of 1944, which deals specifically with flood control operations (as opposed to the numerous public interest activities identified in FPA section 10(a)), and NDAA 2020 § 7612 (which concerns only the Pensacola Project, as opposed to all other Commission-licensed projects)—must control.</p> <p>In harmonizing these statutory provisions in this manner, USACE retains exclusive authority for flood control, including requirements relating to water surface elevations at Grand Lake, as provided under section 7 of the Flood Control Act of 1944 and NDAA 2020 § 7612. And while the Commission is prohibited under these laws from regulating flood control, including the regulation of water surface elevations, it meets its obligation under the public interest/comprehensive development standards of FPA sections 4(e) and 10(a) with respect to flood control by deferring to USACE—which is, in effect, no different than other FPA provisions that extend mandatory conditioning authority in the areas of federal reservations and fishways to</p>

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			<p>other agencies. <i>See</i> 16 U.S.C. §§ 797(e), 811. Moreover, the Commission has long endorsed this harmonization between the FPA and section 7 of the Flood Control Act of 1944. <i>See, e.g., Grand River Dam Auth.</i>, 59 FERC ¶ 62,073 at p. 63,247 (1992) (“The Grand Lake flood pool . . . is controlled by the Corps for flood control storage, as mandated by the Flood Control Act of 1944, and not subject to Commission authority.”); <i>Ala. Power Co.</i>, 143 FERC ¶ 61,249 (2013) (“[T]he Corps has flood control responsibilities on the Coosa River within the [Alabama-Coosa-Tallapoosa] River Basin. Thus, for these reservoirs the Corps, not the Commission, has authority to specify the flood regulation schedules and approve any changes in the flood regulation schedules.”).</p> <p>Finally, NDAA 2020 § 7612(b)(2)(B) provides that the Project “shall remain subject to the Commission’s rules and regulations for project and protection of human health.” While this language confers no authority on FERC to include any license condition relating to reservoir levels, it confirms that the Commission’s project safety regulations will continue to apply.</p> <p>For additional information on this issue, please see GRDA’s response to Comments #55, 57, 68, 78, 105, and 146.</p> <p>Finally, LEAD’s allegation is inconsistent with its own admission that USACE maintains exclusive jurisdiction over flood control. Please see GRDA’s response to Comment #100.</p>
104	LEAD 04/03/2023	<i>The Pensacola Act does not prevent FERC from requiring or conducting the necessary studies for the proper functioning of the Dam.</i>	Congress’ enactment of NDAA 2020 did not limit or impede the environmental study program for this relicensing at Il. At Commission staff’s direction pursuant to its ILP regulations, GRDA has undertaken an exhaustive study plan for investigating environmental effects of the Project, which began in 2018—before Congress’ enactment of NDAA 2020. <i>See</i> 18 C.F.R. §§ 5.9–5.15. The study plan approved by Commission staff continued unabated, despite Congress’ passage of NDAA 2020 in December 2019.
105	LEAD 04/03/2023	<i>Furthermore, the Pensacola Act expressly preserves FERC’s authority and obligation to protect public health and project safety. Irrespective of the Pensacola Act’s limitations on certain FERC authorities, Section 7612(b)(2)(B) of the Pensacola Act creates a public health and project safety safeguard, stating that, “the project shall remain subject to the Commission’s rules and regulations for project safety and protection of human health.” This safeguard is vital in light of the havoc—such as the redistribution of dangerous toxins and contaminants during flooding events—wreaked upon the health and safety of community members in the Grand River watershed. This provision preserves FERC’s authority to condition the project to address the impacts of flooding during the relicensing process.</i>	<p>There is no indication in the plain language of NDAA 2020 § 7612 that Congress intended to displace the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) through a generic reference to “project safety and human health.” Contrary to LEAD’s argument, NDAA § 7612(b)(2)(B) requires that the Project “shall remain subject to the Commission’s rules and regulations” (emphasis added). The passage is a direct reference to Commission rules and regulations applicable to the Project that were in effect at the time Congress enacted NDAA 2020. The only “rules and regulations” applicable to the Project that address issues of “project safety and human health” appear at 18 C.F.R. Part 12. Indeed, the Commission often refers to its Part 12 regulations as pertaining to “the protection of life, health, or property.” <i>E.g.,</i> Form L-3, 54 F.P.C. 1817, 1818 (1975) (Standard Article 4).</p> <p>Thus, the reference to “rules and regulations for project safety and protection of human health” under NDAA 2020 § 7612(b)(2)(B) cannot possibly authorize the Commission to “address the impacts of flooding” as surmised by LEAD. The Commission’s Part 12 regulations do not include flood control operations, and LEAD’s argument for a broad interpretation of this statutory “exception” would violate a foundational canon of statutory construction that an exception cannot swallow the general rule. When “a general statement of policy is qualified by an exception” courts must “read the exception narrowly in order to preserve the primary operation of the provision. <i>Knight v. Comm’r</i>, 552 U.S. 181, 190 (2008) (citing <i>Comm’r v. Clark</i>, 489 U.S. 726, 739, (1989) (“In construing provisions . . . in which a general statement of policy is qualified</p>

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			by an exception, we usually read the exception narrowly in order to preserve the primary operation of the provision.”)).
106	LEAD 04/03/2023	<i>NEPA requires, among other things, all federal agencies to include a detailed environmental impact statement (EIS) in every “recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment.” Therefore, in compliance with NEPA, FERC is required to make a detailed EIS when the regulatory action taken by the Commission under the FPA will have a significant environmental impact. FERC must reject GRDA’s invitation to conduct a cursory analysis of the Dam’s operations and must instead prepare an EIS because, considering the myriad impacts of the Dam relicensing, it will constitute a “major federal action significantly affecting the quality of the human environment.”</i>	The Commission will determine whether an EIS or EA is needed in this relicensing process. LEAD falsely claims that GRDA seeks a “cursory analysis of the Dam’s operations.” GRDA has taken no position as to whether the Commission should prepare an EIS or EA. Instead, GRDA only seeks to ensure that the Commission’s NEPA analysis is properly scoped in light of the unique regulatory requirements of NDAA 2020, including the scope of the proposed action and the range of reasonable alternatives required by NEPA regulations. For example, please see GRDA’s responses to Comments #22 and 148. Also, please see GRDA’s Response to Comments on Updated Study Report, at pages 32-33. Accession No. 20221229-5237.
107	LEAD 04/03/2023	<i>As LEAD Agency continues to point out, FERC’s scoping duties begin early in the NEPA process. FERC should take the immediate step of initiating scoping to begin fulfilling its NEPA obligation to prepare an EIS for the Dam’s relicensing.</i>	LEAD seems to have overlooked that the Commission initiated environmental scoping under NEPA years ago, at the outset of the relicensing effort, including the following: <ul style="list-style-type: none"> • FERC issued Scoping Document 1 on January 12, 2018. Accession No. 2018112-3008. • FERC held 4 scoping meetings for the relicensing in February 2018, in Langley, OK, Grove, OK, Miami, OK, and Tulsa, OK. Accession Nos. 2018112-3008, 2018-0207-4007. • LEAD submitted multiple written comments on Scoping Document 1. Accession Nos. 20180319-0011, 20180319-0012. • FERC issued Scoping Document 2 on April 27, 2018. Accession No. 20180427-3008.
108	LEAD 04/03/2023	<i>GRDA does not identify any effort to aid in the recovery of any listed species. FERC must consult with FWS to ensure that any anticipated adverse effects on the Neosho madtom and Neosho mucket or other listed species are avoided. Before approving any GRDA request, FERC has an affirmative obligation to comply with the consultation requirements under Section 7 of the ESA. Specifically, FERC needs to complete a Section 7 consultation with FWS to ensure sufficient protection of the thirteen listed species identified in the area.</i>	As a technical matter, the Commission’s obligations under the ESA in this relicensing proceeding are governed by section 7. Contrary to LEAD’s assertions, section 7 does not require the Commission to “aid in the recovery of any listed species.” Rather, the standard on section 7 is to ensure that the agency action (i.e., the Commission’s relicensing order) “is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with affected States, to be critical” 16 U.S.C. § 1536(a)(2). Moreover, as required by Commission staff and 18 C.F.R. section 5.18(b)((3)(ii), the FLA includes a draft biological assessment. Please see GRDA’s response to Comment #37.
109	LEAD 04/03/2023	<i>The conclusions drawn by GRDA in the ASCS fail to provide an adequate basis for FERC to decline Section 7 consultation under the ESA. GRDA’s analysis in the DLA is deficient for myriad reasons. These reasons include: (i) making subjective findings which are not based upon biological knowledge; (ii) reliance on limited scientific literature; (iii) ambiguity in terms used without proper definitions; and (iv) insufficient examination of all the effects of the Dam operations on the species and critical habitat. FERC must conduct a Biological Assessment (BA) that will evaluate the Dam’s potential adverse effect on listed species. Under the requirements of Section 7, when a federal agency conducts a BA, the agency may find that the action has no effect on a listed species or that the action may affect a listed species. Unless there is a valid “no effect” determination, consultation with FWS is required. In making this determination, the action agency has discretion on what is considered, including information from on-site inspections for listed species and any studies conducted to assess the effects of the action on species and critical habitat.</i>	LEAD provides no scientific support for its lay and conclusory opinion that GRDA’s studies on ESA-listed species and analysis in the DLA are “deficient.” Commission staff have already determined that GRDA studies on terrestrial and aquatic resources are sufficient for purposes of this relicensing effort, as explained on pages B-25 to B-28 and pages C-3 to C-5 of its March 14, 2023 Determination on Requests for Study Modifications and New Studies for the Pensacola Hydroelectric Project. Accession No. 20230314-3035. Commission staff made similar findings on pages B-18 to B-29 of its February 24, 2022 Determination on Requests for Study Modifications and New Studies for the Pensacola Hydroelectric Project. Accession No. 20220224-3074.

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110	LEAD 04/03/2023	<i>The relicensing of the Dam will have impacts on ESA-listed species within the project area, seven of which are endangered. These species are part of the natural fabric of this region, as evidenced by the Neosho madtom's and the Neosho mucket's habitat in their namesake river. The long history of pollution in this region makes the impacts on these species especially acute, with Grand Lake and its tributaries failing to meet the Oklahoma Water Resource Board's threshold for the "fishing" Beneficial Use category. The detrimental effects on these species—and the legal protections applicable to them to prevent their extinction and ensure their recovery—translate directly into the inability of LEAD Agency and other community members to engage in fishing and other cultural practices.</i>	LEAD provides no scientific support for its lay and conclusory opinion that the Project will affect ESA-listed species. GRDA's studies, conducted in accordance with the Commission-approved study plan, demonstrate otherwise. Please see FLA, Exhibit E, Section 3.7. In addition, please see the draft biological assessment attached to FLA, Exhibit E.
111	LEAD 04/03/2023	<i>FWS has previously found that "dams and associated reservoirs are known to alter stream hydrology and flows, impact channel geomorphology and trap bedload, alter water quality, alter fish communities and impede movements of stream fishes, and destroy habitat by inundation." The habitats of freshwater mussels are vulnerable to water quality degradation and habitat modification from such activities. Much of the decline in distribution and abundance of the Neosho mucket can be imputed to sedimentation.</i>	<p>LEAD's comment characterizes the impact of dams and reservoirs on multiple stream processes and states that the habitats of freshwater mussels are vulnerable to such activities. However, this project is not analyzing the impact of the dam's presence on Neosho Mucket or Neosho Madtom, as that would be considered pre-project effects. Please see GRDA's response to Comment #77. This comment also speaks to cumulative effects, which are addressed in GRDA's responses to Comments #43 and 70.</p> <p>In the DLA (and now the FLA), GRDA does analyze changes to proposed reservoir operations and includes a sedimentation analysis to evaluate the effects of sedimentation from these actions (FLA Exhibit E, Section 3.3.2.2). This analysis found no difference between the baseline operation and anticipated operation in relation to sediment depositional patterns; the sheer stress is too high in the habitat for sediment deposition to occur. It should also be noted that most of the sedimentation occurring in the reservoir is downstream of areas where the Neosho Madtom and Neosho Muckets (not documented from Project Boundary) occur and would not inhabit due to their unique biology.</p> <p>Finally, it bears noting that the USFWS analysis relied upon by LEAD found that greater than 75% of the sedimentation occurring happens under high flow events which are not under the control of GRDA's operations.</p> <p>For these reasons, GRDA does not agree with LEAD's statement that "[m]uch of the decline in distribution and abundance of the Neosho mucket can be imputed to sedimentation." Although sedimentation does influence fish and freshwater mussel habitats, GRDA's anticipated Project operations will not influence sediment depositional patterns in areas where Neosho Mucket or Neosho Madtom occur.</p>
112	LEAD 04/03/2023	<i>GRDA erroneously downplays the impacts of the Dam on these species, to the extent that FWS has criticized GRDA's analysis, repeatedly. For both the Neosho madtom and Neosho mucket, GRDA has described that the change in river velocities between the baseline and anticipated operations is "relatively minimal." In the DLA, with reference to Neosho madtom, GRDA has stated that the ASCS concluded that "anticipated changes to inundation will have minimal, if any, influence on the upstream areas of the Neosho River where the fish is most common." When discussing the effect on the Neosho mucket, GRDA has found through its ASCS that "the change in river velocities between the baseline and anticipated operations is relatively minimal." FWS has correctly noted that such descriptions of inundation changes as "minor" and velocity changes as "minimal" are subjective and are not rooted in biological knowledge of the species.</i>	This issue is addressed in the draft biological opinion, which appears as an appendix to Exhibit E of the FLA. Please see GRDA's response to Comment #37.
113	LEAD 04/03/2023	<i>Moreover, GRDA has not defined "minimal," which leaves an impermissible gap in the analysis of the connection between the project's operations and the true impact on the aquatic species. Therefore, GRDA's conclusions regarding the effect on the Neosho madtom and Neosho mucket are conclusory and arbitrary.</i>	Please see GRDA's response to Comment #72. Moreover, the draft biological opinion, which appears as an appendix to Exhibit E of the FLA, addresses this issue. Please see GRDA's response to Comment #37.

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114	LEAD 04/03/2023	<i>Additionally, GRDA failed to discuss the cumulative effects of the proposed Dam operations.56 A decision by FERC based on the limited information provided by this study would be arbitrary and grossly unsupported by evidence necessary to adequately comply with the requirements of Section 7.</i>	Please see GRDA's response to Comments #43 and 70.
115	LEAD 04/03/2023	<i>Under FERC's regulations, there must be an analysis of "any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied," a standard that the DLA's studies fail to meet.</i>	In arguing that the Commission should not rely solely on the Aquatic Species of Concern Study in preparing its biological assessment, LEAD is citing the Commission's regulations regarding the development of the proposed study plan under the ILP—which occurred in this relicensing effort 5 years ago. <i>See</i> Accession No. 20180517-5063. While this regulation is wholly irrelevant to the Commission's preparation of the biological opinion, GRDA agrees that the Commission is not confined to the Aquatic Species of Concern Study when preparing its biological assessment.
116	LEAD 04/03/2023	<i>Furthermore, if it is found that the action is affecting a listed species and there is a requirement to prepare a Biological Opinion (BO), then it must be prepared in accordance with the provisions of the ESA. A mere shift in jurisdictional control between GRDA and USACE at various reservoir levels, or for that matter, GRDA invoking the Pensacola Act, does not justify affecting species that require protection and cannot preclude preparing a BO by foregoing ESA's legal requirements. FERC must ensure compliance with ESA provisions and take appropriate action. Contrary to GRDA's implication, the Pensacola Act does not change FERC's bedrock responsibility to comply with the ESA. The Pensacola Act purported to clarify FERC's FPA authority but did not change or make any reference to other statutes of general applicability such as the ESA.</i>	GRDA agrees with LEAD that any biological opinion must address the proposed federal action. In this case, however, any changes in water surface elevations are not part of the federal "action." For more information, please see GRDA's response to Comments #22, 38, 55, and 59. Regardless, the scientific record developed in this relicensing effort demonstrate that the Project does not adversely affect any ESA-listed species under anticipated Project operations during the new license term. For more information, please see the biological assessment that is attached to Exhibit E of the FLA, as well as FLA, Exhibit E, Section 3.7.
117	LEAD 04/03/2023	<i>The DLA is lacking because it ignores the impacts of sediment deposition on the Neosho madtom and Neosho mucket. FWS's earlier findings provide: Sedimentation may adversely impact the Neosho madtom and Neosho mucket by adversely affecting the health of adults and juveniles, reducing the abundance of food, reducing suitability of important habitats, and hindering the developments of eggs, larvae and juveniles. Sediment may smother substrates within the riverbed, which impedes the movement of water and could thereby result in death of adult Neosho madtoms residing within the substrate due to oxygen deprivation or entrapment. Fine sediment in suspension can directly damage gills of adult and juvenile specimens resulting in impaired oxygen uptake and osmoregulation. Additionally, suspended sediment can deplete oxygen in the aquatic environment. Impacts to respiration and stress could result in lowered resistance to bacterial and viral infections. Additionally, sediment deposition can occur in excavated nests, reducing egg survival or resulting in the loss of clutches. Sedimentation also alters interstitial flow rates, which can result in mortality of adult and juvenile Neosho mucket specimens due to oxygen deprivation and entrapment. It also impacts the glochidial life stage of the female Neosho mucket. Furthermore, "sedimentation can result in adverse impacts to lower trophic levels and result in temporal or long-term impacts to the food supply for the Neosho madtom and the Neosho mucket."</i>	Please see GRDA's response to Comment #111.
118	LEAD 04/03/2023	<i>GRDA refers to major flooding events in the area to justify that predicted sedimentation at higher levels have been addressed by the Sediment Transport Model (STM). However, GRDA fails to address the fact that by increasing the lake levels, which would keep the lake level between three feet below flood stage up to flood stage year-round as a usual norm, there would be higher chances of such incidences happening more frequently, thereby subjecting the wildlife to a higher risk of recontamination.</i>	As an initial matter, LEAD's factual allegations in this comment are wrong. Please see GRDA's response to Comment #73. Based upon extensive study over the last several years according to a study methodology approved by Commission staff, the Sedimentation Study has shown that sediment moving through the system consists of fine, cohesive material. It has also evaluated a range of datasets for stream bathymetry and overland topography in the study area and concluded significant portions of the 1998 REAS data are unreliable, and

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			<p>the circa-1940 data are limited. To bound the uncertainties of the available datasets, multiple sediment transport simulations were performed, and the study showed that nature, not Project operations, dictates the rate of sedimentation in Grand Lake. Any material impacts to upstream WSE during large flow events are the result of sediment loading, which GRDA does not control. Furthermore, when the water level in Grand Lake is above 745 feet PD or expected to rise beyond that level, USACE assumes exclusive jurisdiction over Project operations and dictates operation of the reservoir to mitigate downstream flooding, and most (75.6%) of the sediment is delivered to the reservoir under exactly these conditions.</p> <p>In addition, extensive study over the last several years according to a study methodology approved by the Commission, both the H&H Study results and a Ph.D.-level historical report demonstrate that nature has an outsized impact on flooding of communities upstream of the Project. Numerical analysis performed in the H&H Study shows that the maximum impact of nature ranges from 10 to over 1,000 times the maximum simulated impact of GRDA's anticipated operations (Mead & Hunt, 2022). This quantified result is based on analysis of maximum WSE, maximum inundation extent, and duration of inundation. For all metrics studied, the definitive conclusion was that nature's impact is orders of magnitude greater than any simulated impact of GRDA's anticipated operations. This quantified conclusion agrees with the historical record: natural flooding of communities upstream of the Project has occurred both prior to and during the Project's existence. The historical record shows nature will flood the Neosho/Grand basin, regardless of the presence and operation of flood control structures. Such is the magnitude of natural floods that accumulate in the 10,345 square mile watershed that provides natural inflows to the Project.</p>
119	LEAD 04/03/2023	<i>Flooding events have adverse effects on the Neosho madtom and Neosho mucket specimens. Although entrapment due to the Dam relicensing would adversely affect the Neosho madtom and Neosho mucket, "these specimens will likely already be adversely affected due to removal from occupied habitat as a result of the flooding."</i>	LEAD's comment is factually wrong. In this relicensing effort, GRDA has conducted numerous studies and modeling analyses that have been developed under intense review and scrutiny by Commission staff and all relicensing participants over the past 5 years. After years of this peer review and refinement process, these models and studies demonstrate that flooding along the Neosho River, Spring River, Elk River, and Tar Creek is not attributable to Project operations—but rather by natural events. Consistent with these scientific conclusions, a Ph.D.-level historical report that has been attached to the FLA demonstrates that significant and regular flooding events have been documented for as long as the historical record in this basin exists—and long before the construction of the Project. For more information, please see GRDA's response to Comment #69.
120	LEAD 04/03/2023	<i>The Dam is located within the range of federally endangered bat species and its relicensing is bound to have severe harmful consequences on the species population. Inundation due to the Dam's operations will have catastrophic effects not only on the bat caves but also on the bat roosts in trees.</i>	LEAD provides no scientific support for its lay and conclusory opinion that the Project will have "severe" and "catastrophic" effects on ESA-listed bat species and their habitat. GRDA's studies, conducted in accordance with the Commission-approved study plan, demonstrate otherwise. Please see FLA, Exhibit E, Section 3.7. In addition, please see the draft biological assessment attached to FLA, Exhibit E.
121	LEAD 04/03/2023	<i>The gray bat, which is a federally endangered mammal, has two caves i.e., DL-2 and DL-91, which fall within the project vicinity. GRDA specifies in the DLA that the caves are used by the bats "year-round for both raising young (maternity sites) and overwinter hibernation (hibernacula)." In its DLA, GRDA has categorically stated that cave abandonment may result from high water events. GRDA has admitted in an earlier study that, "persistent threat of inundation increases the likelihood of "take" of adults and young." GRDA also admitted that inundation results in: a significant disruption to normal behavior including feeding, rearing of young, and sheltering, and possibly forcing evacuation of the colony.... Forcing the colony to vacate during critical maternity periods (March through July) likely adversely affects pregnant or lactating females, and non-volant or newly volant young.... Other potential adverse effects include the</i>	<p>LEAD's comment overlooks the fact that Cave DL-91 is not located within the Project boundary. And even though the entrance of Cave DL-2 does occur within the Project boundary, GRDA's control of the operation of the reservoir does not exceed 745 feet PD, and the entrance of this cave is higher than the 745 feet PD elevation. In addition, most of the subterranean part of the cave including the alternative exit of the cave lies outside of the footprint on the Project boundary (based on a 750 feet PD contour).</p> <p>For these reasons, GRDA stands by its position that the proposed action will not adversely affect the ESA-listed gray bat, for the following reasons:</p>

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		<p><i>stress of being trapped, drowning, and, if adults are trapped outside the cave, stress and mortality of non-volant young.</i></p> <p><i>The information provided by GRDA in the DLA detailing the impact of inundation on Cave DL-2 as well as GRDA's insufficient monitoring and protection measures to avoid adverse effects to the species, illustrates the pressing need for a Section 7 consultation with FWS. Despite earlier comments by FWS on the Study Reports for relicensing, GRDA has failed to address them in the DLA and has focused its proposed environmental measures upon tracking vegetation management permits and reviewing Shoreline Management Plan applications, instead of incorporating proactive measures in the DLA to protect the bats, consistent with comments made by FWS. FWS in its comments called into question GRDA's study on bats and raised concern over flooding the entrance increasing the risk of take and unknown effects of forced evacuation to alternative caves. FWS commented that, "anything that forces the females to leave when pups are non-volant is far from negligible under either scenario."</i></p>	<ul style="list-style-type: none"> Any changes to water surface elevations that may result as a result of the termination of the rule curve in accordance with NDAA 2020 § 7612 is not part of the federal "action" for purposes of ESA section 7. Please see GRDA's response to Comments #38 and 116. After years of this peer review study process, these models and studies demonstrate that flooding along the Neosho River, Spring River, Elk River, and Tar Creek is not attributable to Project operations—but rather by natural events. Consistent with these scientific conclusions, a Ph.D.-level historical report that has been attached to the FLA demonstrates that significant and regular flooding events have been documented for as long as the historical record in this basin exists—and long before the construction of the Project. For more information, please see GRDA's response to Comment #69. Water enters cave DL-2 only when the USACE has exclusive jurisdiction over Project operations for flood control purposes. Please see GRDA's responses to Comments #55, 59, 68, and 103. <p>Additional discussion on ESA-listed bats appears in the draft biological assessment contained as an appendix to FLA, Exhibit E.</p>
122	LEAD 04/03/2023	<p><i>GRDA, in its modeling studies, has not accounted for the foreseeable future effects of climate change on the extent of flooding inundation and duration. Hence, the actual flooding inundation and duration will be much more than GRDA's estimations include.</i></p>	<p>LEAD provides no scientific support for its lay and conclusory opinion that "actual flooding inundation and duration" in the future "will be much more than GRDA's estimates." In addition, Commission staff has repeatedly rejected the claim, raised by LEAD and others, that climate studies are needed in this relicensing effort, including:</p> <ul style="list-style-type: none"> February 23, 2022 Determination on Requests for Study Modification and New Studies for the Pensacola Hydroelectric Project, pages B-17 to B-18. Accession No. 20220224-3074. March 14, 2023, Determination on Requests for Study Modification and New Studies for the Pensacola Hydroelectric Project, page B-15. Accession No. 20230314-3035. <p>Because Commission staff repeatedly rejected this comment by LEAD, there is no reason for GRDA to again respond to this issue.</p>
123	LEAD 04/03/2023	<p><i>FWS had stated that "[h]uman and non-human modification of hibernacula, particularly altering or closing hibernacula entrances, is considered the next greatest threat after [white-nose syndrome] WNS to the [northern long-eared bats] NLEB." Notably, certain "modifications, e.g., closure of a cave entrance with structures/materials besides a bat-friendly gate, can cause a partial or complete loss of the capability of a site to serve as a hibernaculum."</i></p>	<p>This issue is addressed in the draft biological opinion, which appears as an appendix to Exhibit E of the FLA. Please see GRDA's response to Comment #37.</p>
124	LEAD 04/03/2023	<p><i>FWS had also recommended that studies be done for tree roosting bats such as northern long-eared bats (NLEB) Indiana bats, and tricolored bat. GRDA has not paid heed to the expertise of FWS and has still not proposed or implemented environmental measures for protection of such tree-roosting bat species. In the DLA, GRDA has made erroneous assumptions that even if the base of trees containing roosting bats were inundated as a result of increase in water surface elevations, "the inundation itself would not cause a take of NLEB unless a non-volant bat fell out of the tree into the water."</i></p>	<p>LEAD provides no scientific support for its lay and conclusory opinion that GRDA has made "erroneous assumptions" regarding effects to bat species due to flooding. Any change to GRDA's Project operations as a result of NDAA 2020 § 7612 is not part of the federal "action" for purposes of ESA section 7. Please see GRDA's responses to Comments #38, 55, 59, and 116.</p> <p>Moreover, after years of this peer review and iterative study process, the models and studies prepared in this relicensing effort demonstrate that flooding along the Neosho River, Spring River, Elk River, and Tar Creek is not attributable to Project operations—but rather by natural events. Consistent with these scientific</p>

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			<p>conclusions, a Ph.D.-level historical report that has been attached to the FLA demonstrates that significant and regular flooding events have been documented for as long as the historical record in this basin exists—and long before the construction of the Project. For more information, please see GRDA’s response to Comment #69.</p> <p>Finally, GRDA cannot reasonably be faulted on the basis that it has not “paid heed to the expertise of FWS.” LEAD overlooks the fact that Commission staff rejected USFWS’s request to study this issue, as provided on pages C-3 to C-5 of its March 14, 2023 Determination on Requests for Study Modification and New Studies for the Pensacola Hydroelectric Project. Accession No. 20230314-3035.</p> <p>Regardless of these objections, this issue raised by LEAD is addressed in the draft biological opinion, which appears as an appendix to Exhibit E of the FLA. Please see GRDA’s response to Comment #37.</p>
125	LEAD 04/03/2023	<i>GRDA also goes on to erroneously state that “anticipated reservoir fluctuations and flow releases are not likely to adversely affect the species under the baseline or the anticipated operations.” GRDA has already failed to conduct the required analyses necessary to accurately capture the extent of flooding, including the full range of starting reservoir elevations required by the approved study plan.</i>	<p>LEAD is wrong in asserting that GRDA has yet to complete the Commission-required study plan. Recently, Commission staff concluded on page B-9 of its Determination on Requests for Study Modifications and New Studies for the Pensacola Hydroelectric Project, Accession No. 20230314-3035, that:</p> <p>“GRDA has met the requirements of the approved study plan with respect to the modeling of a range of scenarios and reporting the results. The information provided is sufficient for an analysis of a realistic range of operational alternatives. Therefore, we do not recommend that GRDA be required to analyze a wider range of operational alternatives.”</p> <p>For additional information on this issue, please see GRDA’s response to Comment #73.</p> <p>For this reason, there is no factual or scientific basis to LEAD’s comment that GRDA’s analysis regarding effects attributable to reservoir fluctuations. Contrary to LEAD’s lay and conclusory statement, after years of the iterative, peer-reviewed study process, the models and studies prepared in this relicensing effort demonstrate that flooding along the Neosho River, Spring River, Elk River, and Tar Creek is not attributable to Project operations—but rather by natural events. Consistent with these scientific conclusions, a Ph.D.-level historical report that has been attached to the FLA demonstrates that significant and regular flooding events have been documented for as long as the historical record in this basin exists—and long before the construction of the Project. For more information on this issue, please see GRDA’s response to Comment #69.</p>
126	LEAD 04/03/2023	<i>Failure to use the full range of starting elevations means that the actual extent of the inundation of the trees containing roosting bats has not been correctly determined. Not only would the inundation cause take of the NLEB, but there is also the added risk of a non-volant bat falling out of the tree into the water. This is especially dangerous during the summer months when there are maternity colonies and non-volant pups. Therefore, the responsibility for preventing the resulting impacts on endangered species due to the inundation of the bat caves, as well as impacts on the tree-roosting bats, lies squarely within FERC’s authority to regulate GRDA’s operation of the Dam.</i>	Please see GRDA’s responses to Comments #124 and 125.
127	LEAD 04/03/2023	<i>Therefore, to fully assess the Dam’s impacts as required by NEPA and the FPA, FERC must complete a comprehensive sedimentation study, including but not limited to a heavy metal study on the sediments that the Dam’s operations distribute in Grand Lake’s watershed.</i>	Commission staff’s March 9, 2023 Determination on Requests for Study Modification and New Studies for the Pensacola Hydroelectric Project, Accession No. 20220224-3074, addresses both these issues, as follows:

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			<ul style="list-style-type: none"> With regard to LEAD’s comment on a sedimentation study, GRDA is in the process of preparing the additional information requested by Commission staff as described on pages B-21 to B-25. With regard to LEAD’s request for a study of the Project’s contribution to distribution of heavy metals in the Grand Lake watershed, Commission staff will determine whether to recommend this study after GRDA submits the additional information on the H&H Model and Sedimentation Study, as explained on pages C-1 to C-3.
128	LEAD 04/03/2023	<i>A comprehensive metal analysis within the reservoir is necessary to fully characterize these risks so that FERC can evaluate solutions, including but not limited to reduced lake levels, during the relicensing process for the Dam. In the DLA, GRDA has confined itself to just a Cs-137 test, despite the presence of excessive levels of other toxic heavy metals such as lead, cadmium, and zinc in the Grand Lake watershed’s sediment. FERC should conduct tests beyond just a Cs-137 test, and analyze the presence of lead, cadmium, and zinc in the Grand Lake watershed to comply with its obligations under the FPA and its own regulations.</i>	Please see GRDA’s response to Comment #127.
129	LEAD 04/03/2023	<i>However, not being responsible for the presence of the heavy metals in the TSMD upstream of the Dam, or not being identified as a Potentially Responsible Party (PRP) under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) by the EPA with respect to the TSMD, does not absolve GRDA from carrying out a proper sediment transport analysis for the said levels.</i>	Please see GRDA’s response to Comment #127.
130	LEAD 04/03/2023	<i>FERC has an obligation to protect historical and cultural resources under the NHPA. Section 106 of the NHPA requires FERC to independently identify and assess the effects of the Dam on historic and cultural resources within a properly defined APE, along with seeking the comments of State Historic Preservation Officers (SHPO) or the Tribal Historic Preservation Officers (THPO).</i>	<p>LEAD misstates the requirements of section 106 of the National Historic Preservation Act (NHPA). Both courts and the Commission have held that NHPA—like NEPA—is a procedural statute that only requires an analysis of effects to historic properties that are listed or eligible for listing in the National Register of Historic Places and does not require the Commission to “protect historical and cultural resources” as stated by LEAD. <i>E.g., Friends of the Atglen-Susquehanna Trail v. Surface Transp. Bd.</i>, 252 F.3d 246, 263 (3d Cir. 2001); <i>accord Conn. Trust for Historic Pres. v. Interstate Commerce Comm’n</i>, 841 F.2d 479, 484 (2d Cir. 1988). As the Commission has stated, section 106 imposes no obligation to “require that all adverse effects on historic properties be avoided or mitigated.” <i>City of Tacoma</i>, 84 FERC ¶ 61,107, at p. 61,566 (1998); <i>accord Sayles Hydro Assocs.</i>, 82 FERC ¶ 61,091, at p. 61,346 (1998) (holding that although the Advisory Council on Historic Preservation’s “regulations implementing section 106 require consultation on ways to avoid or mitigate adverse effects on historic properties, they do not prohibit federal agencies from taking actions that would adversely affect those properties”).</p> <p>With regard to the Commission’s section 106 obligations in this undertaking (i.e., the relicensing effort), Commission staff have conducted government-to-government meetings with Native American tribes, and in 2018 designated GRDA as its non-federal representative for purposes of carrying out informal NHPA section 106 consultation. Since that time, GRDA, in consultation with the Oklahoma State Historic Preservation Office (SHPO), Oklahoma Archaeological Survey (OAS), and numerous Native American tribes, has completed several years of cultural resources investigations, including of archaeological resources, traditional cultural properties, and the built environment. All of these studies have been filed to the Commission’s record in this proceeding. Moreover, GRDA has conducted quarterly meetings of the Cultural Resources Working Group (CRWG) to review study results and identify additional areas of study.</p> <p>And finally, GRDA has developed a Historic Properties Management Plan (HPMP), attached to the DLA (and now the FLA) that will govern the appropriate management of historic properties through the new license term.</p>

#	Entity, Date	Comment	GRDA Response
			<p>The complete and extensive record of consultation related to the section 106 effort in this undertaking appears as an attachment to the comment/response table for historic properties, which has been filed as a privileged and confidential attachment to the FLA.</p> <p>For these reasons, GRDA is confident that the Commission is well aware of its responsibilities under NHPA section 106 and will fulfill its obligations thereunder prior to issuing its relicensing decision.</p>
131	LEAD 04/03/2023	<i>FERC must take into account the views of tribal leaders and interested stakeholders, including parties like LEAD Agency. FERC must seek and consider the views of the public in a manner that reflects the nature and complexity of the Dam relicensing and its effects on historic properties and the likely interest of the public in the effects on historic properties.</i>	<p>Please see GRDA’s response to Comment #130.</p> <p>GRDA disagrees with LEAD’s assertion that it must be consulted as part of the NHPA section 106 process. Due to confidentiality concerns, the CRWG consists only of Commission staff, Oklahoma SHPO, OAS, Native American tribes, and GRDA. The Commission has not directed GRDA to include other entities in this consultation effort.</p> <p>However, throughout the relicensing effort—including as part of the study plan development in 2018, the Initial Study Report in 2021, and the Updated Study Report in 2022—GRDA prepared publicly available documentation and a public meeting on its cultural resources investigations. LEAD therefore had numerous opportunities to articulate its views on this matter, and its comment fails to explain why it has waited until this very late stage of the ILP to suggest its interest in this subject area.</p>
132	LEAD 04/03/2023	<i>FERC must complete the section 106 process prior to the issuance of the license, as part of the Dam relicensing process. It must ensure that the Section 106 process is initiated early in the Dam’s relicensing, so that a broad range of alternatives may be considered during the Dam relicensing process. Early federal agency engagement with tribes is a matter of respect for tribal sovereignty.</i>	Please see GRDA’s response to Comment #130.
133	LEAD 04/03/2023	<i>FERC must not rely on GRDA’s Cultural Resources Study and must conduct a study itself to ensure that the APE covers all affected areas.</i>	<p>Please see GRDA’s response to Comment #130.</p> <p>Moreover, LEAD offers no principled reason why the Commission should not rely on GRDA’s cultural resources studies. All of these studies have been completed as required by the Commission-approved study plan. All members of the CRWG have had numerous opportunities to review and comment on Volumes I, II, and III of the cultural resource reports, and each individual Native American tribe has had an opportunity to comment on its designated chapter of the TCP inventory and effects analysis. There simply is no basis for LEAD’s suggestion that these studies are unreliable.</p> <p>Finally, Commission staff already rejected LEAD’s assertion that the Commission itself, rather than the project applicant, should conduct relicensing studies. As Commission staff explained on pages B-15 and C-2 of its March 14, 2023 Determination on Requests for Study Modification and New Studies for the Pensacola Hydroelectric Project, “it is longstanding practice that the applicant conducts the studies necessary for licensing.” Accession No. 20230314-3035.</p>
134	LEAD 04/03/2023	<i>The APE proposed by GRDA is inadequate and does not include geographic areas within which the Dam will directly or indirectly cause alterations in the character or use of historic properties. The proposed APE, moreover, does not consider the scale and nature of the Dam.</i>	LEAD provides no scientific or technical support for its lay and conclusory opinion that the APE is inadequate. Please see GRDA’s response to Comment #65.

#	Entity, Date	Comment	GRDA Response
135	LEAD 04/03/2023	<i>Through its proposed APE, GRDA has blatantly disregarded the concerns of the affected tribes and stakeholders. This requires FERC to take charge and not only rectify the APE but also holistically assess the adverse effects on historic properties within the correctly defined APE by incorporating the views concerning such adverse effects of all consulting parties.</i>	<p>Due to the confidential nature of the cultural resources investigations, LEAD has no direct knowledge of GRDA's longstanding and collaborative approach for conducting cultural resources investigations, the breadth and quality of these investigations, and its extensive efforts to work with CRWG participants to establish the APE. LEAD has not even reviewed the numerous study reports that the study program has produced, as these reports are privileged and confidential. Therefore, its comment should be summarily disregarded as uninformed and biased.</p> <p>For more information, please see GRDA's responses to Comments #65 and 130.</p>
136	LEAD 04/03/2023	<i>Besides Section 106, Section 110 of NHPA lays down the historic preservation responsibilities of federal agencies and is intended to ensure that historic preservation is fully integrated into the ongoing programs of all federal agencies. FERC has the responsibility for identifying and protecting historic properties and avoiding damage to them. It has the affirmative responsibility to further the purposes of the NHPA, and it must consider the costs of preservation activities as eligible project costs when undertaking the Dam relicensing. NHPA and NEPA impose distinct but closely related sets of duties on federal agencies when addressing cultural resources. Since both NEPA133 and NHPA are applicable in the present scenario, the requirements of these two statutes should be integrated.</i>	GRDA is confident that the Commission is aware of its responsibilities under the NHPA and will meet its obligations through the well-established and familiar process that applies in each hydropower relicensing undertaking. For more information, please see GRDA's response to Comment #130.
137	LEAD 04/03/2023	<i>FERC had earlier directed GRDA to consult with and seek concurrence of the SHPO and THPO regarding the APE for the Dam relicensing. Despite a clear directive from FERC, GRDA's delineation of the APE and consultation with stakeholders is wanting in accuracy and inclusiveness. FERC's understanding of the APE is that it must "encompass project-related effects both within and outside the Project boundary." Recognizing that the results of the first year of environmental studies could warrant a change to the APE, FERC recommended that GRDA consult with participants in the Cultural Resources Working Group (CRWG) following the first year of environmental studies to determine whether any change to the APE was warranted. FERC in its Study Modification Determination stated, "the proposed final APE should clearly identify: (1) the Project Boundary; (2) lands outside the Project Boundary that are included in the final APE, and (3) the specific locations of any tribal trust lands that GRDA and BIA determine are within the Project Boundary." FERC has repeatedly emphasized that comments or requests for modifications could be provided by tribes and stakeholders and still stresses the importance of participation by tribes and stakeholders.</i> <i>The Quapaw Nation raised concerns that the APE did not extend far enough upstream and has vociferously disagreed with GRDA's delineation of the APE, especially in light of the recontamination and inundation. Despite repeatedly identifying issues, the Quapaw Nation communicated to GRDA that adequate identification efforts had not taken place, "especially within the Traditional Cultural Property (TCP) identified by Quapaw Nation.</i>	Please see GRDA's responses to Comments #65, 130, and 135.
138	LEAD 04/03/2023	<i>GRDA has reneged on its promises of keeping the APE flexible and has provided zero flexibility.</i>	LEAD's inaccurate comment demonstrates complete misunderstanding of the iterative process, guided by the science, for establishing the APE in this undertaking. For more information, please see GRDA's response to Comments #65, 130, and 135.
139	LEAD 04/03/2023	<i>It is evident from the stand of the Quapaw Nation, BIA, OAS, and the Cherokee Nation that the current APE requires modification in light of the effects of upstream flooding. GRDA has chosen to ignore the comments of the key stakeholders and essentially FERC's directives too. Despite the untrustworthiness demonstrated by GRDA, it continues to base its APE on its faulty H&H Modeling Study. Details of the inadequacies of the</i>	<p>Please see GRDA's response to Comment #138.</p> <p>Moreover, LEAD's objection to HPMP procedures that require the establishment of a site-specific APE for future undertakings that may occur during the new license term is illogical and uninformed. Establishing an</p>

#	Entity, Date	Comment	GRDA Response
		<i>H&H Modeling Study have been further elaborated in Section II.A below. Besides these inadequacies, GRDA has also suggested establishing a site-specific APE after finalization of the Historic Properties Management Plan (HPMP), which is in utter violation of the word of law and specifically the “prior to the approval” language of the NHPA.</i>	APE for an undertaking is standard practice, and articulating this requirement in the HPMP itself provides assurance that GRDA will follow best practices for any Project-related undertaking that may arise during the new license term.
140	LEAD 04/03/2023	<i>FERC has a legal obligation to consider upstream flooding and climate change impacts when evaluating GRDA’s relicensing application for the Dam, notwithstanding that the DLA fails to adequately capture the Dam’s adverse impacts on historically disadvantaged communities. This failure is of particular concern given community members have suffered from years of environmental degradation caused by recontamination during flooding events from operation of the Dam.</i>	<p>With regard to LEAD’s comment on consideration of upstream flooding, nearly the entire Commission-approved study plan has focused on this issue, which GRDA has now addressed exhaustively. As demonstrated in both the Initial Study Report (2021) and Updated Study Report (2022), these studies reveal that Project operations do not materially contribute to water surface elevations during flooding events—and rather, that natural inflows are responsible for flooding in the Neosho River watershed. This conclusion is buttressed by a Ph.D.-level historical investigation, included in the FLA, demonstrating that the Neosho Basin has been subjected to significant and frequent flooding—long before Pensacola Dam was constructed. For more information, please see GRDA’s responses to Comments #72 and 73.</p> <p>With regard to LEAD’s comment on climate change impacts, please see GRDA’s response to Comment #122.</p> <p>Regarding LEAD’s lay and scientifically unsupported claims of adverse effects on disadvantaged communities, FLA, Exhibit E, Section 3.10 demonstrates that all communities in the Project vicinity are greatly benefitted by the presence and continued operation of the Project for the renewable, non-emitting energy it produces; for the public recreational opportunities it provides; for the environmental resources it protects and enhances; for the downstream flood protection it provides to citizens throughout the Arkansas River Basin; and for the regional economic engine it offers. Quite simply, the Project is the single most important public resource in all of Northeast Oklahoma.</p>
141	LEAD 04/03/2023	<i>Moreover, the proposed 30-to-50-year license period makes it even more critical to account for increased vulnerability to flooding over that same period, especially considering GRDA’s history of deficient flood control practices.</i>	<p>LEAD’s comment is wrong for several reasons:</p> <ul style="list-style-type: none"> • There is no scientific support for LEAD’s lay and conclusory allegation of “increased vulnerability to flooding” over the license term. As demonstrated in both the Initial Study Report (2021) and Updated Study Report (2022), the studies conducted in this relicensing effort reveal that Project operations do not materially contribute to water surface elevations during flooding events—and rather, that natural inflows are responsible for flooding in the Neosho River watershed. This conclusion is buttressed by a Ph.D.-level historical investigation, included in the FLA, demonstrating that the Neosho Basin has been subjected to significant and frequent flooding—long before Pensacola Dam was constructed. For more information, please see GRDA’s responses to Comments #72 and 73. • LEAD wrongfully accuses GRDA of having a “history of deficient flood control practices.” Under a long line of federal statutes, USACE has exclusive jurisdiction over flood control. GRDA has no authority over flood control at the Project. For more information, please see GRDA’s responses to Comments #55, 59, and 68. In fact, LEAD’s accusation is inconsistent with its own admission that USACE maintains exclusive jurisdiction over flood control. Please see GRDA’s response to Comment #100.

#	Entity, Date	Comment	GRDA Response
			While GRDA has no authority over flood control, it categorically disagrees with LEAD’s accusation of “deficient flood control practices.” LEAD’s uninformed statement does not account for the fact that USACE must balance flood control throughout the Arkansas River basin in real-time.
142	LEAD 04/03/2023	<i>The regulatory framework governing hydroelectric projects requires FERC to step in and conduct its own analysis of upstream flooding given gross inadequacies of GRDA’s flooding impact studies.</i>	LEAD raised this issue in its USR comments, which Commission staff rejected on page B-15 of its March 14, 2023 Determination on Requests for Study Modifications and New Studies for the Pensacola Hydroelectric Project. Accession No. 20230314-3035. Accordingly, there is no reason for GRDA to again respond to this issue.
143	LEAD 04/03/2023	<i>...in violation of its current license, GRDA still has not acquired the proper legal rights for its operations, which leads to underestimations of the actual extent of flooding.</i>	GRDA is not in violation of its license. It has acquired fee title or sufficient ownership interests over all lands that the Commission has determined to be necessary and appropriate for the Project. For more information, please see GRDA’s response to Comments #57, 59, and 102.
144	LEAD 04/03/2023	<i>FERC is also legally obligated to consider the impacts of climate change on the Dam’s operations using the latest scientific projections available. Without these additional analyses, FERC does not have adequate information to approve the proposed increases in lake surface elevation.</i>	Please see GRDA’s response to Comment #122.
145	LEAD 04/03/2023	<i>Dam operations have been linked to major upstream flooding events dating back to the 1940s. In 1957, the Dam was responsible for a devastating flood that caused millions of dollars in property damage and forced hundreds of residents to evacuate their homes. In 1986, a flood caused by the Dam’s operations again resulted in millions of dollars in damages to the surrounding area. A 2007 flood caused water damage to more than 600 homes in the City of Miami, 236 of which were destroyed, according to the City. In 2015, the Dam contributed to historic flooding in the City, and surrounding areas, causing property damage and significant economic losses, and receiving criticism from residents and officials for not providing enough warning before releasing dam waters in response to the heavy rainfall. In 2019, the City was once again affected by a record flood event caused by heavy rainfall and the Dam’s operations – according to news reports, some residents blamed GRDA for not releasing water sooner to prevent severe flooding and widespread evacuations in the region. The history of upstream flooding and mine pollution draining into the Tar Creek watershed has also led to numerous environmental and health problems for the community, including contaminated drinking water, elevated levels of lead in blood samples of residents, and high rates of respiratory and other health problems.</i>	<p>LEAD’s lay and conclusory allegations regarding Project-caused flooding during past flooding events are belied by the comprehensive and exhaustive scientific record developed in this relicensing proceeding. As demonstrated in both the Initial Study Report (2021) and Updated Study Report (2022), the studies conducted in this relicensing effort reveal that Project operations do not materially contribute to water surface elevations during flooding events—and rather, that natural inflows are responsible for flooding in the Neosho River watershed. This conclusion is buttressed by a Ph.D.-level historical investigation, included in the FLA, demonstrating that the Neosho Basin has been subjected to significant and frequent flooding—long before Pensacola Dam was constructed.</p> <p>While GRDA does not dispute of significant and frequent flooding events that have occurred in the Neosho River basin dating back to the beginning of recorded history, the scientific, technical, and historic record demonstrate that the Project did not cause or materially exacerbate the extent or duration of flooding.</p> <p>For more information, please see GRDA’s responses to Comments #72 and 73.</p>
146	LEAD 04/03/2023	<i>In the DLA, GRDA relies on the FCA and Water Control Manual to erroneously claim that USACE has exclusive jurisdiction for flood control operations when the reservoir elevation is above 755 feet PD. GRDA has tried to wash its hands of flooding impacts by stating that when the water level in Grand Lake is above 745 feet PD or expected to rise beyond that level, USACE assumes exclusive jurisdiction over Dam operations (also see Section III.C for discussion on FERC’s obligation to consult with USACE as a cooperating agency). When lake levels surpass 745 feet PD, USACE directs the Dam’s flood control operations, which GRDA follows. However, GRDA “is responsible for regulation above elevation 755.0, according to the express language of the operative agreement between GRDA and the USACE. GRDA has repeatedly disregarded its responsibility when reservoir levels reach 755 feet PD. GRDA itself acknowledges in its Response to Comments on the Updated Study Report that by virtue of the Water Control Manual that responsibility still lies with GRDA once reservoir levels reach 755 feet PD.</i>	<p>LEAD’s comment misinterprets the 1992 Water Control Manual. Under section 7 of the Flood Control Act of 1944 and section 7612 of NDAA 2020, Congress has granted exclusive flood control jurisdiction to USACE. The plain language of these statutes does not establish an elevational or other limit to USACE’s exclusive authority, as inferred by LEAD’s allegation.</p> <p>LEAD is correct that the Water Control Manual establishes elevation 755 feet as the top of the flood control pool. See Pensacola Reservoir Grand (Neosho) River, Oklahoma Water Control Manual, at page 7-1 (1992). But that designation does <i>not</i> mean that GRDA has flood control jurisdiction once water levels at Grand Lake exceed elevation 755 feet. To the contrary, the Manual includes a “Normal Flood Control Regulation Schedule,” which contains precise requirements for Project operations when Grand Lake is at or above elevation 755 feet, as follows:</p>

#	Entity, Date	Comment	GRDA Response
			<ul style="list-style-type: none"> • When Grand Lake is at or above elevation 755 feet and is rising, the Manual requires: “Spillway gates will be opened to maintain the pool at elevation 755.0 or until all gates are fully open.” • When Grand Lake is at or above elevation 755.0 feet and is falling, the Manual requires: “The maximum discharge attained shall be held until the pool recedes to elevation 755.0.” <p>Manual, Table 7-1, at p. 7-4.</p> <p>In addition, the Manual contains an “Emergency Flood Control Regulation Schedule,” which also contains specific directives for Project operations when Grand Lake is at or above elevation 755:</p> <ul style="list-style-type: none"> • When Grand Lake is at or above elevation 755 feet and is rising, the Manual requires: “Spillway gates will be opened to maintain the pool at elevation 755.0 or until all gates are fully opened.” • When Grand Lake is at or above elevation 755.0 feet and is falling, the Manual requires: “The maximum discharge attained shall be held until the pool recedes to elevation 755.0.” <p>Manual, Table 7-2, at p. 7-5.</p> <p>It is true that the Manual indicates, that, during normal flood control regulation, GRDA “is responsible for regulation above elevation 755.0.” Manual, Table 7-1, at p. 7-4. LEAD’s comment asserts that this single sentence (which, in fact, is a footnote to a table) transfers complete flood control jurisdiction to GRDA. But that cannot possibly be correct, for several reasons:</p> <ul style="list-style-type: none"> • First, USACE’s Manual cannot abrogate the many acts of Congress that grant exclusive flood control jurisdiction to USACE—none of these acts of Congress indicate an elevational limit to USACE’s flood control jurisdiction. • Second, the Manual does not purport to shift flood control responsibilities to GRDA once Grand Lake reaches elevation 755 feet. Rather, the Manual establishes precise flood control directives for periods when Grand Lake is at or above 755 feet—conclusively demonstrating that USACE, throughout its Manual, is exercising its exclusive flood control jurisdiction when Grand Lake is at or above 755 feet. • Third, the language relied upon by LEAD only confers responsibility upon GRDA for “regulation” during period when the reservoir is at or above elevation 755 feet. This language does <i>not</i> indicate that GRDA has full and complete authority to disregard the requirements of the Manual, as LEAD’s comment suggests. Rather, this sentence only recognizes that during these emergency situations, when Grand Lake levels have surpassed the capacity of Grand Lake, that GRDA—whose personnel are physically located at the Project and responding to a critical situation in real-time—must have the flexibility to immediately regulate reservoir levels to save Project infrastructure in a quickly-changing and dynamic environment. • Fourth, the language relied upon by LEAD appears <i>only</i> in Table 7-1, which establishes the normal flood control regulation schedule. This language does <i>not</i> appear in Table 7-2, which establishes the emergency flood control regulation schedule. Thus, accepting LEAD’s argument would result in the absurd result that USACE has exclusive flood control jurisdiction in areas above elevation 755 feet during “emergency” flood control situations, while GRDA assumes flood control jurisdiction in areas above elevation 755 feet during “normal” flood control situations. <p>For these reasons, GRDA’s responsibilities under the Manual for regulation during normal flood control operations once Grand Lake exceeds elevation 755 feet cannot possibly extinguish USACE’s statutory</p>

#	Entity, Date	Comment	GRDA Response
			<p>responsibilities for flood control. The plain language of the many statutes governing USACE’s flood control jurisdiction leave no room for this result, and the language in the Manual itself does not confer flood control jurisdiction upon GRDA.</p> <p>For more information regarding USACE’s exclusive flood control jurisdiction established by federal statute, please see GRDA’s responses to Comments #55, 59, and 68.</p> <p>Finally, LEAD’s allegation that GRDA assumes flood control jurisdiction once Grand Lake exceeds elevation 755 feet is inconsistent with its own admission that USACE maintains exclusive jurisdiction over flood control. Please see GRDA’s response to Comment #100.</p>
147	LEAD 04/03/2023	<p>Moreover, GRDA fails to acknowledge that they retain responsibility for project safety and protection of human health. USACE abides by the policies governing water control management activities, which specify that the project owner (i.e., GRDA) may take measures to mitigate an imminent threat to public health and safety, property, or the environment for non-USACE projects.</p>	<p>Please see GRDA’s responses to Comments #103 and 105.</p>
148	LEAD 04/03/2023	<p>GRDA’s H&H Modeling Study failed to consider the full range of starting reservoir elevations required by the approved study plan, nor did it account for the full extent of the project’s jurisdictional boundaries. GRDA justifies limiting its modeling analysis to starting elevations between 742 feet and 745 feet PD because it proposes to maintain the conservation pool within that range. However, in the February 24, 2022 Determination on Requests for Study Modifications and New Studies for the Pensacola Hydroelectric Project (SMD letter), FERC noted that several modifications to the H&H Modeling Study were required, including additional model runs starting at an elevation of 734 feet PD to 757 feet PD. While GRDA provided some additional study results required in the SMD letter, on March 14, 2023, FERC again issued a study determination requiring the H&H Modeling Study, including additional model runs starting at an elevation of 734 feet PD to 757 feet PD. FERC noted that “[g]iven the variation in recent pre-flood drawdowns, and to model such variations more accurately, a standard engineering practice is to run the model at the ‘extreme’ boundaries for each operational alternative.”</p>	<p>GRDA agrees with LEAD that the additional information required by FERC’s March 14, 2023 Determination on Requests for Study Modification and New Studies for the Pensacola Hydroelectric Project imposes additional modeling runs of “‘extreme’ boundaries” of the model. Indeed, the variation simulations are meant to explore the extreme, hypothetical scenario where USACE would:</p> <ol style="list-style-type: none"> 1. Ignore its jurisdictional authority over flood control, and 2. Disregard USGS stream gage data (which USACE regularly monitors), <p>Until the flood wave reaches Pensacola Dam itself, which is approximately 60 miles downstream of the USGS gage in Miami, Oklahoma. Under this hypothetical scenario, USACE would resume its jurisdictional authority and duty only <i>after</i> the flood waters reach Pensacola Dam. GRDA is in the process of developing these simulations and will file the results on July 24, 2023, in accordance with the Commission’s March 29, 2023 letter approving an extension of time.</p> <p>Obviously, neither USACE nor GRDA would operate the Project in this irresponsible that would abrogate statutory and regulatory requirements. Thus, these additional modeling runs do not represent anything close to reasonable alternatives for NEPA purposes. Under NEPA, “[t]he range of alternatives that must be considered is a matter within an agency’s discretion but must be sufficient to permit a reasoned choice of alternatives, i.e., ‘reasonable’ alternatives.” <i>See, e.g., Duke Energy Carolinas, LLC</i>, 123 FERC ¶ 61,069, at P 31 (2008). NEPA regulations define “reasonable alternatives” as “a reasonable range of alternatives that are technically and economically feasible, and meet the purpose and need for the proposed action.” 40 C.F.R. § 1508.1(z). Courts have shed additional light on this language, and have found, for example, that an alternative is “reasonable” if it is objectively feasible, as well as “reasonable in light of [the agency’s] objectives.” <i>Theodore Roosevelt Cons. P’ship v. Salazar</i>, 661 F.3d 66, 72 (D.C. Cir. 2011) (quoting <i>City of Alexandria v. Slater</i>, 198 F.3d 862, 867 (D.C. Cir. 1999)). Thus, “the goals of an action delimit the universe of reasonable alternatives.” <i>Citizens Against Burlington, Inc. v. Busey</i>, 938 F.2d 190, 195 (D.C. Cir. 1991).</p> <p>Accordingly, GRDA strongly disagrees with the notion that model runs starting at an elevation of 734 feet PD and extending up to 757 feet PD will produce any information that will inform the assessment of any reasonable alternative for NEPA purposes, for the following reasons:</p>

#	Entity, Date	Comment	GRDA Response
			<ul style="list-style-type: none"> • First, under NDAA 2020, neither FERC nor any other agency has any authority to impose any license requirement relating to water surface elevations within the conservation pool (up to elevation 745 feet PD), and only USACE has authority to regulate water surface elevations in the flood pool (elevations above 745 feet PD). Because Congress has removed any authority for the regulation of Grand Lake as provided by these extreme, hypothetical modeling runs, they cannot possibly be considered “reasonable alternatives” for purposes of NEPA. • Second, these extreme reservoir levels would produce absurd results. GRDA cannot possibly operate the Project up to elevation 757 feet PD, as the top of the flood pool is 755 feet PD. That scenario presents a technical impossibility. And of course the USACE will not ignore any incoming flooding event until the flood waters reach Pensacola Dam—some 60 river miles downstream of the upper reaches of Grand Lake. With respect to reservoir levels as low as 734 feet PD, that operational scenario would strip the Project of a most of its value as a hydropower generating facility and severely affect recreational resources at Grand Lake, and therefore would not be economically feasible as NEPA regulations require, nor would it achieve the Commission’s objectives under the Federal Power Act. <p>Accordingly, GRDA is completing the additional modeling runs required by Commission staff—not for purposes of analyzing any possible “reasonable alternative”—but rather to test the bounds of the modeling work, which is the only reason Commission staff requested this information.</p>
149	LEAD 04/03/2023	<i>GRDA’s failure to acquire proper legal rights through flowage easements to flood non-federal lands has been an ongoing issue for decades, and further, FERC has previously raised unanswered concerns about GRDA’s failure to obtain the necessary flowage easements. Without the proper legal agreements in place, the operation of the Dam runs the risk of violating its license terms and community members’ property interests under state and federal laws.</i>	The allegations in LEAD’s comments are wrong. GRDA has obtained fee title or other interests in all lands that the Commission has determined to be necessary and appropriate for the Project. For more information, please see GRDA’s responses to Comments #57, 59, 102, and 143.
150	LEAD 04/03/2023	<i>Given its authority in the relicensing process, FERC has a duty to ensure that the project complies with all applicable laws and regulations, including those related to property rights. FERC must finally take seriously the historically disadvantaged communities in the area by requiring GRDA to acquire all flowage easements necessary for community members to be properly compensated for the actual extent of flooding experienced on the ground.</i>	<p>With regard to LEAD’s mistaken accusations concerning property rights, please see GRDA’s responses to Comments #57, 59, 102, and 143.</p> <p>With regard to LEAD’s inaccurate claims concerning disadvantaged communities, please see GRDA’s response to Comment #140.</p> <p>With regard to LEAD’s specious allegations that the Project has caused flooding, please see GRDA’s response to Comments #72, 73, and 145.</p> <p>Concerning LEAD’s request for community members to be compensated, GRDA in its Response to Comments on Updated Study Report (pages 39-40) explained that FERC lacks any authority to award compensation. Accession No. 20221229-5237.</p>
151	LEAD 04/03/2023	<i>The full history of GRDA’s failure to acquire legal rights through flowage easements dates back to the construction of the Dam. In 1938, the FCA authorized the Secretary of the Army to construct and operate the Dam for flood control purposes, and as part of this authorization, the Secretary was required to acquire flowage easements from all property owners whose land would be subject to flooding because of the Dam’s operation. However, the USACE was unable to acquire all necessary flowage easements. Consequently,</i>	The allegations in LEAD’s comments are wrong. GRDA has obtained fee title or other interests in all lands that the Commission has determined to be necessary and appropriate for the Project. For more information, please see GRDA’s responses to Comments #57, 59, 102, and 143.

#	Entity, Date	Comment	GRDA Response
		<i>when GRDA took over operation of the Dam from the USACE in the 1940s, it inherited a situation in which it did not have the legal right to flood all non-federal lands. Over the years, GRDA attempted to acquire the remaining flowage easements through negotiations with property owners but was unable to do so.</i>	<p>Contrary to LEAD’s attempt to inaccurately re-write history, GRDA has never been under any obligation to obtain fee title, flowage rights, or other interests outside the FERC-established Project boundary. And NDAA 2020 § 7612 confirms that GRDA will never have such obligation, absent its written consent. For more information, please see GRDA’s responses to Comments #55, 57, and 59.</p> <p>For a much more detailed and accurate reporting of the history of the Project’s development, including the identification of lands necessary for the FERC-licensed Project, please see the Ph.D.-level report, entitled <i>A History of Flooding, Flood Control, and Hydropower on the Neosho (Grand) River</i> (2023), which appears as an attachment to FLA, Exhibit E.</p>
152	LEAD 04/03/2023	<i>The flowage easements issue was finally brought to the forefront in the 1990s, when the City of Miami conducted a study that found that the failure to acquire all necessary flowage easements led to increased flood risk for the City. The study recommended that GRDA acquire the remaining flowage easements as soon as possible. In response to this study and other concerns about the issue, GRDA began a renewed effort to acquire the remaining flowage easements. However, progress has been slow, and to date, after more than 20 years since the City’s study, there are still some property owners who have not granted easements. GRDA does not have the authority to flood these lands without proper legal agreements in place.</i>	LEAD’s comment is incorrect. In fact, USACE (not the City of Miami) prepared the 1998 <i>Grand Lake, Oklahoma, Real Estate Adequacy Study</i> . Contrary to LEAD’s comment, USACE did not make any recommendations “that GRDA acquire the remaining flowage easements.” To the contrary, the federal statute that directed USACE to complete the <i>Real Estate Adequacy Study</i> authorized the Secretary of the Army (not GRDA) to “acquire from willing sellers such real property interests in any lands identified in the study as the Secretary determines are necessary to reduce adverse impacts identified in the study . . .” Pub. L. No. 104-303, § 560(a).
153	LEAD 04/03/2023	<i>In addition, in its April 29, 2020 Letter Order, FERC relied on the Pensacola Act to conclude it does not have authority to require GRDA to bring additional land into the project boundary. GRDA similarly relied on this erroneous interpretation in its Response to Comments on the Updated Study Report.</i>	While the D.C. Circuit has required FERC to interpret NDAA 2020 § 7612 as part of the remand in <i>City of Miami v. FERC</i> , 22 4th 1039 (D.C. Cir. 2022), the plain language of the statute repeatedly forbids the Commission from bringing any additional lands into the Project boundary, absent the written consent of GRDA. For more information, please see GRDA’s responses to Comments #55, 57, and 59.
154	LEAD 04/03/2023	<i>Further, the D.C. Circuit stated that “the evidence that Pensacola Dam’s operation has caused the flooding in [Miami] is powerful” and ordered FERC to address the City of Miami’s efforts to compel enforcement of the current license.</i>	LEAD’s comment excludes a critical passage from the court’s statement in <i>City of Miami v. FERC</i> , 22 4th 1039 (D.C. Cir. 2022). The full sentence reads: “Assuming, as the Commission staff seemed to suggest, that the Authority bears that responsibility, the evidence that Pensacola Dam’s operation has caused the flooding in the City is powerful.” <i>Id.</i> at 1043 (emphasis added). With this full context of the court’s statement, there can be no question that the court did <i>not</i> determine whether Project causes flooding in Miami. In fact, the court remanded the case to the Commission to make this determination: “We grant the petitions for review and remand to the Commission for it to determine . . . the responsibility the Authority bears <i>if it caused flooding in the City</i> . . .” <i>Id.</i> at 1044 (emphasis added).
155	LEAD 04/03/2023	<i>As discussed above and in LEAD Agency’s prior comments, the Pensacola Act in no way affects FERC’s obligation to consider and address upstream flooding during the relicensing process. The Pensacola Act explicitly requires the Dam “to remain subject to the Commission’s rules and regulations for project safety and protection of human health.” Hence, FERC’s obligation to address upstream flooding—and protect local residents, their safety, and their health, as well as environmental quality—becomes even more crucial because the relicensing of the Dam will approve Dam operations for decades to come that could lead to flooding events and the resulting recontamination of flooded properties with toxic sediments and waters.</i>	<p>LEAD is mistaken. NDAA § 7612 plainly forbids the Commission from imposing any license measures relating to water surface elevations at the Project. Although the statute provides that the Project is to “remain subject to the Commission’s rules and regulations for project safety and protection of human health,” that provision does not authorize the Commission to impose reservoir level requirements for flood control purposes. It merely ensures that the Commission’s project safety regulations under 18 C.F.R. Part 12 will continue to apply. The statute confirms that USACE—not the Commission or any other agency—has exclusive jurisdiction over flood control at the Project.</p> <p>For more information, please see GRDA’s responses to Comments #55, 57, 59, 68, 103, and 105.</p>

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			In addition, it bears noting that LEAD's comment is inconsistent with its own admission that USACE maintains exclusive jurisdiction over flood control. Please see GRDA's response to Comment #100.
156	LEAD 04/03/2023	<i>However, without the proper flowage easements, it is not possible for FERC to accurately assess the potential environmental impacts of the Dam's continued operation. By arbitrarily constraining the project boundary according to only the existing easements, the true extent of flooding is not being considered in GRDA's flood impact analyses. The failure to acquire all necessary flowage easements has been a persistent issue for GRDA and has led to legal challenges and concerns about public safety and property rights.</i>	LEAD is wrong for at least 3 reasons: <ul style="list-style-type: none"> • GRDA has obtained fee title or flowage easements for all land that the Commission as determined to be necessary for the Project. For more information, please see GRDA's responses to Comments #57, 59, 68, 102, 105, and 143. • Congress in NDAA 2020 prohibits the Commission from adding any additional land to the Project without the written consent of GRDA. For more information, please see GRDA's responses to Comments #55, 57, and 59. • The analyses conducted in this relicensing effort under the H&H Model and Sediment Transport Model were not confined to areas within the Project boundary.
157	LEAD 04/03/2023	<i>To truly provide an understanding of the Dam's operational effects, any model used must be designed to account not only for how the Dam might be operated in light of the historical record, but also to account for future climate change scenarios.</i>	Please see GRDA's response to Comment #122.
158	LEAD 04/03/2023	<i>FERC does not have adequate information to approve GRDA's request to eliminate any use of a rule curve, and thus possess discretion to increase lake surface elevation, because the agency has a legal obligation to first address upstream flooding risks from the change, including the amplification of those risks by climate change. As already discussed, GRDA's DLA did not provide sufficient information or analysis to demonstrate that the proposed increase in surface elevation would not worsen the Dam's impacts on upstream flooding over a 30-to-50-year relicensing period.</i>	LEAD's comment is incorrect for 4 reasons: <ul style="list-style-type: none"> • GRDA is not requesting the Commission to authorize any increased lake levels, as maintained by LEAD. In NDAA 2020 § 7612, Congress removed any authority for the Commission or any other agency to regulate water surface elevations at Grand Lake, except in limited circumstances. Please see GRDA's response to Comments #22, 55, 57, 59, 68, and 105. Thus, the rule curve currently required under Article 401 of the existing license will simply expire once the new license becomes effective, and the new license will not contain any reservoir level requirement, as NDAA 2020 directs. Any change in reservoir levels that occurs as a result of Congress' prohibition under NDAA 2020 is not within FERC's purview and is beyond the scope of the proposed action. • Even in the hypothetical absence of section 7 of the Flood Control Act of 1944 and NDAA 2020 § 7612, GRDA would not have to demonstrate that any change in Project operations "would not worsen the Dam's impacts on upstream flooding over a 30- to 50-year relicensing period." The Commission's decision in this hypothetical scenario would be governed by the comprehensive development/public interest standard of sections 4(e) and 10(a) of the FPA, 16 U.S.C. §§ 797(e), 803(a). The Commission has repeatedly determined that this standard does not require the mitigation of all adverse effects of a project as LEAD alleges, but rather requires a balancing in the public interest. <i>See Pac. Gas & Elec. Co.</i>, 106 FERC ¶ 61,065 (2004) ("Neither NEPA nor FPA Section 10(a)(1) requires that every environmental impact be fully mitigated. NEPA is a procedural statute that requires the federal action agency to take a 'hard look' at the environmental consequences of its decisions and reasonable alternatives before it acts. . . . FPA Section 10(a)(1) requires the Commission to ensure that license conditions reflect an appropriate balancing of all public interest considerations, which may result in either the diminution or enhancement of any given resource relative to the environmental baseline."); <i>Holyoke Water Power Co.</i>, 88 FERC

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			<p>¶ 61,186, at p. 61,619 (2004) (“Nothing in the FPA requires a licensee to make whole every affected interest, or undertake or fund what may be worthwhile proposals for the general civic and economic improvement of the neighborhood.”); <i>see also City of Tacoma</i>, 86 FERC ¶ 61,311, at p. 62,100 (1999); <i>Ohio Power Co.</i>, 71 FERC ¶61,092, at p. 61,314& n.43 (1995); <i>Pac. Gas & Elec. Co.</i>, 120 FERC ¶ 62,001, at P 99 (2007).</p> <ul style="list-style-type: none"> As demonstrated in both the Initial Study Report (2021) and Updated Study Report (2022), the studies conducted in this relicensing effort reveal that Project operations do not materially contribute to water surface elevations during flooding events—and rather, that natural inflows are responsible for flooding in the Neosho River watershed. This conclusion is buttressed by a Ph.D.-level historical investigation, included in the FLA, demonstrating that the Neosho Basin has been subjected to significant and frequent flooding—long before Pensacola Dam was constructed. LEAD provides no scientific or technical support for its lay and conclusory opinion that the flooding risks will be amplified by climate change, and that any such amplification of flooding would be attributable to Project operations. Again, all studies conducted in this relicensing effort demonstrate that Project operations do not cause or exacerbate flooding in the Neosho River watershed. For more information, please see GRDA’s response to Comment #122.
159	LEAD 04/03/2023	<i>In its DLA, GRDA erroneously claims that FERC is prohibited from regulating lake surface elevations. Surface elevations are a key aspect of hydropower project design and operation, and FERC has broad authority to set terms and conditions for project licenses. As previously discussed, Section 7612(c) of the Pensacola Act does not preclude FERC from regulating surface elevations as part of its licensing process. FERC has an independent obligation to ensure that hydropower projects comply with applicable laws and regulations, including those related to public safety and environmental protection. Therefore, it is well within FERC’s authority to consider any adverse impacts that would arise from granting GRDA discretion over setting lake surface elevations.</i>	<p>GRDA disagrees with LEAD’s interpretation of NDAA 2020 § 7612. The plain language of this statute prohibits the Commission or any other federal or state agency from regulating water surface elevations at Grand Lake, except with respect to USACE’s flood control operations. While the statute also requires that the Project “remain subject to the Commission’s rules and regulations for project safety and protection of human health,” this language does not authorize the Commission to impose any requirement relative to water surface elevations, except as may be provided under the Commission’s project safety regulations at 18 C.F.R. Part 12.</p> <p>For more information, please see GRDA’s responses to Comments #55, 57, 59, 68, 103, and 105.</p>
160	LEAD 04/03/2023	<i>In addition, E.O. 14008 directs federal agencies to take a proactive and precautionary approach to mitigating the impacts of climate change, including assessing and addressing the impacts of agency actions on climate change. E.O. 13990 directs federal agencies to take a precautionary approach by using the best available science to make sound decisions that affect public health and the environment. In the context of the Dam, this would mean considering the potential risks and uncertainties associated with climate change impacts, and potentially delaying or modifying the relicensing process until adequate data and analysis can be conducted to ensure the public interest is protected. By taking a precautionary approach, FERC can ensure that the Dam is licensed and operated in a way that is safe and sustainable for the environment and local communities.</i>	Please see GRDA’s response to Comment #122.
161	LEAD 04/03/2023	<i>When reviewing the DLA, FERC must consider environmental justice (EJ) concerns, such as adverse environmental and human health effects in the local community. FERC must also address stakeholder concerns relating to local communities’ economy, health, and environment. To that end, FERC should collaborate with other agencies and stakeholders in the decision-making process. Such a collaborative and inclusive approach will allow FERC to retain authority while ensuring informed and timely action. This approach, moreover, will enable FERC to meet federally mandated EJ objectives.</i>	<p>Regarding LEAD’s comment on environmental justice, please see GRDA’s response to Comment #140.</p> <p>With respect to LEAD’s comment on socioeconomic resources, on pages B-31 to B-32 of its February 24, 2022 Determination on Requests for Study Modifications and New Studies for the Pensacola Hydroelectric Project, Commission staff determined that the socioeconomic study already completed by GRDA is sufficient. Accession No. 20220224-3074.</p>

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162	LEAD 04/03/2023	<i>To achieve its EJ objectives in northeast Oklahoma, FERC must recognize and protect the interests of the thousands of Indigenous, low-income, and otherwise marginalized residents of areas affected by the Dam. FERC should do so by seriously considering the problems that will continue to arise if it approves the DLA. If it fails to address EJ concerns when reviewing GRDA's relicensing application, FERC will harm local communities' economy, health, and environment.</i>	Please see GRDA's response to Comment #140.
163	LEAD 04/03/2023	<i>Additionally, rather than undermine concerns, GRDA should fulfill its duty to adequately consider community concerns. When LEAD Agency expressed concerns and sought action, GRDA diminished valid points, referring to LEAD Agency's concerns as "non-existent," lacking "good cause," and "fatally flawed." The time is now for GRDA to address community concerns in a professional and timely manner.</i>	GRDA has addressed all comments and concerns raised by LEAD in good faith, informed by the scientific record developed in this relicensing process, as well as by governing statutes and regulations.
164	LEAD 04/03/2023	<i>As previously discussed, FERC must meet its EJ objectives by considering and protecting tribal and stakeholder interests in areas affected by the Dam. The APE consultation process illustrates that entrusting GRDA to consult with Tribes and stakeholders will not suffice. Obtaining information is not enough. The information must be considered and addressed to ensure that marginalized communities do not continue to suffer the harsh consequences of unjust environmental decisions. GRDA's steamrolling over substantive disagreement without acknowledgment or engagement is deeply troubling. Thus, FERC should work directly with stakeholders in a collaborative process that takes seriously the longstanding EJ concerns in northeast Oklahoma.</i>	Regarding LEAD's comment on environmental justice, please see GRDA's response to Comment #140. With regard to LEAD's comments on development of the APE, please see GRDA's responses to Comments #65, 130, and 135.
165	LEAD 04/03/2023	<i>To appropriately address EJ concerns in northeast Oklahoma, FERC should collaborate during the upcoming NEPA process with other agencies, such as the EPA, and with relicensing stakeholders like LEAD Agency. This collaborative approach will "improve the quality of decision-making and increase public trust and confidence in agency decisions." Doing so is necessary to achieve NEPA's interdisciplinary mandate. Furthermore, FERC must ensure, through a cooperating agency and other means, that a range of stakeholders meaningfully participate in this process to achieve better outcomes. A lead agency may designate a cooperating agency to participate in the NEPA process. A "cooperating agency" refers to "any Federal agency, other than a lead agency, that has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposed project or project alternative." CEQ also extends this opportunity to non-federal agencies that "are interested in assuming the responsibilities of becoming a cooperating agency" such as "tribal, state, or local agencies." In addition to engaging cooperating agencies, FERC should designate a working group to ensure adequate and informed public participation.</i>	With regard to LEAD's comments on environmental justice, please see GRDA's response to Comment #140. With regard to its broader comments on the NEPA process, LEAD seems to misapprehend that the entire ILP process—beginning with the release of Scoping Document 1 in 2018, and continuing through the development and implementation of the Commission-approved study plan, and including public review and comment opportunities under the ILP through the ISR and USR procedures—provide ample opportunities for stakeholder engagement and participation in this relicensing effort. As this process continues, GRDA expects the Commission to invite other agencies to be cooperating agencies in the development of its NEPA document.

APPENDIX X-3

**Documentation of Consultation with the Bureau
of Indian Affairs on Federal Tribal Trust Acreage
within the Project Boundary**

Jahnke, Tamara

From: Jahnke, Tamara
Sent: Wednesday, March 15, 2023 1:14 PM
To: Ross, Allison N; Cleary, Conor P; Giebel, Valery O
Cc: Edwards, Brian; Townsend, Darrell; Barrow, Joel; Roper, Aaron
Subject: RE: EXTERNAL: Re: [EXTERNAL] Federal Lands within the Pensacola Project Boundary

The Project Boundary shapefile sent by link this morning was filed with the DLA and is the most recent shapefile for the project boundary.

From: Ross, Allison N <Allison.Ross@bia.gov>
Sent: Wednesday, March 15, 2023 9:45 AM
To: Jahnke, Tamara <Tamara.Jahnke@grda.com>; Cleary, Conor P <conor.cleary@sol.doi.gov>; Giebel, Valery O <valery.giebel@sol.doi.gov>
Cc: Edwards, Brian <Brian.Edwards@grda.com>; Townsend, Darrell <Darrell.Townsend@grda.com>; Barrow, Joel <Joel.Barrow@grda.com>; Roper, Aaron <Aaron.Roper@grda.com>
Subject: EXTERNAL: Re: [EXTERNAL] Federal Lands within the Pensacola Project Boundary

Ms. Jahnke,

Thank you for the shapefile and information.

I would also like to request your most recent shapefile of the project boundary, please.

Thank you,
Allison Ross
Environmental Protection Specialist
BIA, Eastern Oklahoma Region
P.O. Box 8002
Muskogee, OK 74402-8002
Phone: 918-781-4660
Cell: 918-910-1655

From: Jahnke, Tamara <Tamara.Jahnke@grda.com>
Sent: Wednesday, March 15, 2023 9:35 AM
To: Ross, Allison N <Allison.Ross@bia.gov>; Cleary, Conor P <conor.cleary@sol.doi.gov>; Giebel, Valery O <valery.giebel@sol.doi.gov>
Cc: Edwards, Brian <Brian.Edwards@grda.com>; Townsend, Darrell <Darrell.Townsend@grda.com>; Barrow, Joel <Joel.Barrow@grda.com>; Roper, Aaron <Aaron.Roper@grda.com>
Subject: [EXTERNAL] Federal Lands within the Pensacola Project Boundary

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

 [Relicensing Federal Lands](#)

Attached are the shapefiles as requested. Upon review of the shapefiles, it was discovered the section line used in the revised map for Parcel V was not the same section line used in the Exhibit G maps filed with the DLA. Therefore, Parcel V has been revised to use the same section line as the Exhibit G maps filed with the DLA.

Thanks.

Tamara E. Jahnke
Assistant General Counsel
Grand River Dam Authority
P.O. Box 70
Langley, OK 74350
Direct: 918.610.9686
Tamara.Jahnke@grda.com

Jahnke, Tamara

From: Ross, Allison N <Allison.Ross@bia.gov>
Sent: Friday, March 10, 2023 11:14 AM
To: Jahnke, Tamara
Cc: Edwards, Brian; Townsend, Darrell; Roper, Aaron; Barrow, Joel; Giebel, Valery O; Cleary, Conor P
Subject: EXTERNAL: Re: [EXTERNAL] Federal lands within the Pensacola Project Boundary
Attachments: LETTER to BIA re revised maps 3-9-2023.pdf

You don't often get email from allison.ross@bia.gov. [Learn why this is important](#)

Ms. Jahnke,

I have cc'd Conor Cleary and Valery Giebel with our Solicitor's Office, so they can be included in the conversations and information that will need to be reviewed for your requested review of the Federal lands mapping and information provided.

I am requesting that GRDA provide me with the GIS shapefiles for the maps that have been provided in the attached document. Our GIS team would like to have them for comparison.

If you can provide the shapefiles as soon as possible, it would be greatly appreciated.

Please let me know if you have any questions.

Thank you,
Allison Ross
Environmental Protection Specialist
BIA, Eastern Oklahoma Region
P.O. Box 8002
Muskogee, OK 74402-8002
Phone: 918-781-4660
Cell: 918-910-1655

From: Jahnke, Tamara <Tamara.Jahnke@grda.com>
Sent: Thursday, March 9, 2023 4:47 PM
To: Ross, Allison N <Allison.Ross@bia.gov>
Cc: Edwards, Brian <Brian.Edwards@grda.com>; Townsend, Darrell <Darrell.Townsend@grda.com>; Roper, Aaron <Aaron.Roper@grda.com>; Barrow, Joel <Joel.Barrow@grda.com>
Subject: [EXTERNAL] Federal lands within the Pensacola Project Boundary

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Please see attached letter.
Thanks.

Tamara E. Jahnke
Assistant General Counsel
Grand River Dam Authority
P.O. Box 70
Langley, OK 74350
Direct: 918.610.9686
Tamara.Jahnke@grda.com



March 9, 2023

Allison Ross
Bureau of Indian Affairs
Eastern Oklahoma Region
Eastern Oklahoma Regional Office
P.O. Box 8002
Muskogee, OK 74402

via email: Allison.ross@bia.gov

Re: Federal lands within the Pensacola Project

Dear Ms. Ross:

As you will recall, we have had previous discussions regarding tribal lands within the Pensacola Project boundary beginning around 2018. On March 6, 2018, your office filed Trust Land Maps developed from the BIA's TAAMS system with the Federal Energy Regulatory Commission (FERC). On September 18, 2018, the regional office forwarded the most up to date maps of Trust Land to the Grand River Dam Authority (GRDA) via letter.

On December 30, 2022, GRDA filed its Draft License Application (DLA) for the Pensacola Project with FERC. In Appendix A-5 to Exhibit A of the DLA is a Report on Federal Lands Within the Project Boundary. The report explains the process used to determine the number of acres of federal lands within the Project Boundary and contained detailed maps and title opinions related to the Trust Land Maps provided in 2018 by the BIA. After review and analysis, five (5) parcels were determined to have federal lands within the Project Boundary. A visual inspection of the maps indicated adjustments needed to be made to account for the difference in the coordinate system, projection, or digitizing inaccuracies. The 5 maps noted GRDA would work with the BIA to develop the most accurate maps possible for inclusion in the GRDA's Final License Application (FLA) due May 31, 2023.

Enclosed please find the Report, with supporting documentation, as filed with FERC in the DLA. Also enclosed find the 5 revised maps (Parcels 66, 68, 69, M, and V) proposed for filing in the FLA. These maps were created using sections from the Oklahoma PLSS GRID – Map Service by OWRBOnline (Oklahoma Water Resources Board) dated 9-28-2021. The grid was used to digitize the parcels. Calculate Geometry was used to verify the acreage which also matches the legal

We deliver affordable,
reliable ELECTRICITY,
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and a commitment to
ENVIRONMENTAL
STEWARDSHIP.

We are dedicated to
ECONOMIC DEVELOPMENT,
providing resources and
supporting economic growth.

Our EMPLOYEES
are our greatest asset in
meeting our mission to be an
Oklahoma Agency
of Excellence.

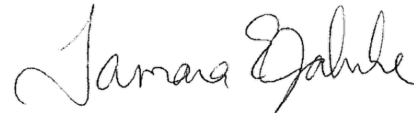


descriptions from the title opinions. The Proposed Project Boundary was integrated, and the acreage recalculated to determine the amount of federal lands within the Project Boundary. The resulting difference in acreage was 0.06 acres. GRDA believes the revised maps more accurately portray the federal land parcels and would request the BIA's concurrence on the matter.

GRDA is available to meet with the BIA to answer any questions concerning the creation of the enclosed maps.

We appreciate your time reviewing the matter.

Sincerely,



Tamara E. Jahnke
Assistant General Counsel
Ecosystems & Education Center
P.O. Box 70
Langley, OK 74350
tamara.jahnke@grda.com
918-610-9686

Encls.



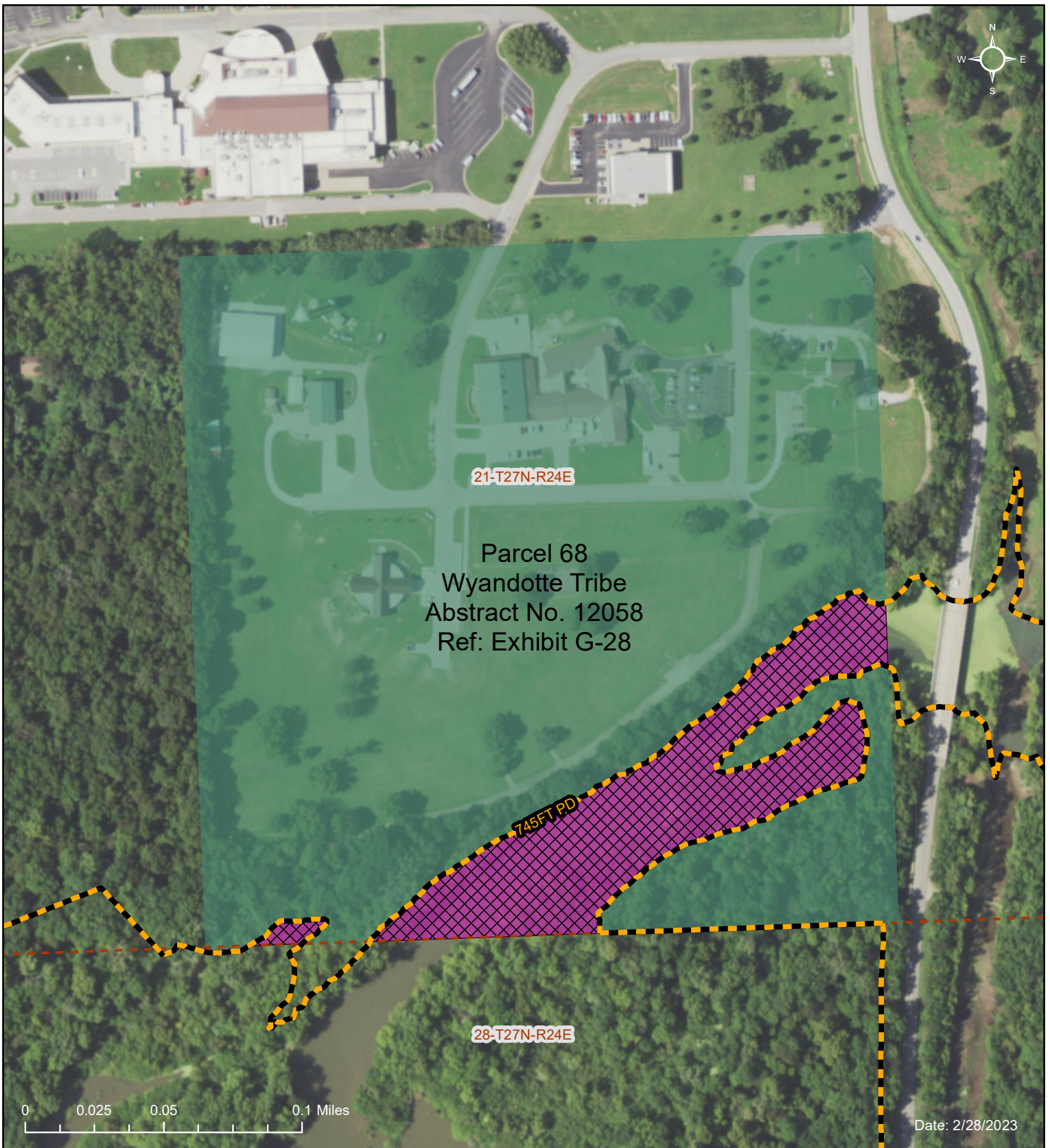
Parcel 66 - Accuracy Adjustment

- Anticipated Project Boundary
- Federal Lands in Anticipated Project Boundary
- Flowage Easement on Federal Lands
- Parcel 66
- Section Line






Federal Lands within the Project Boundary: ≈ .002 Acres

GRDA holds a flowage easement for all federal lands within the Anticipated Project Boundary for Parcel 66.

The federal acreage is derived from Bureau of Indian Affairs GIS data that has been digitized, adjusted, and recalculated by GRDA in an effort to increase accuracy.



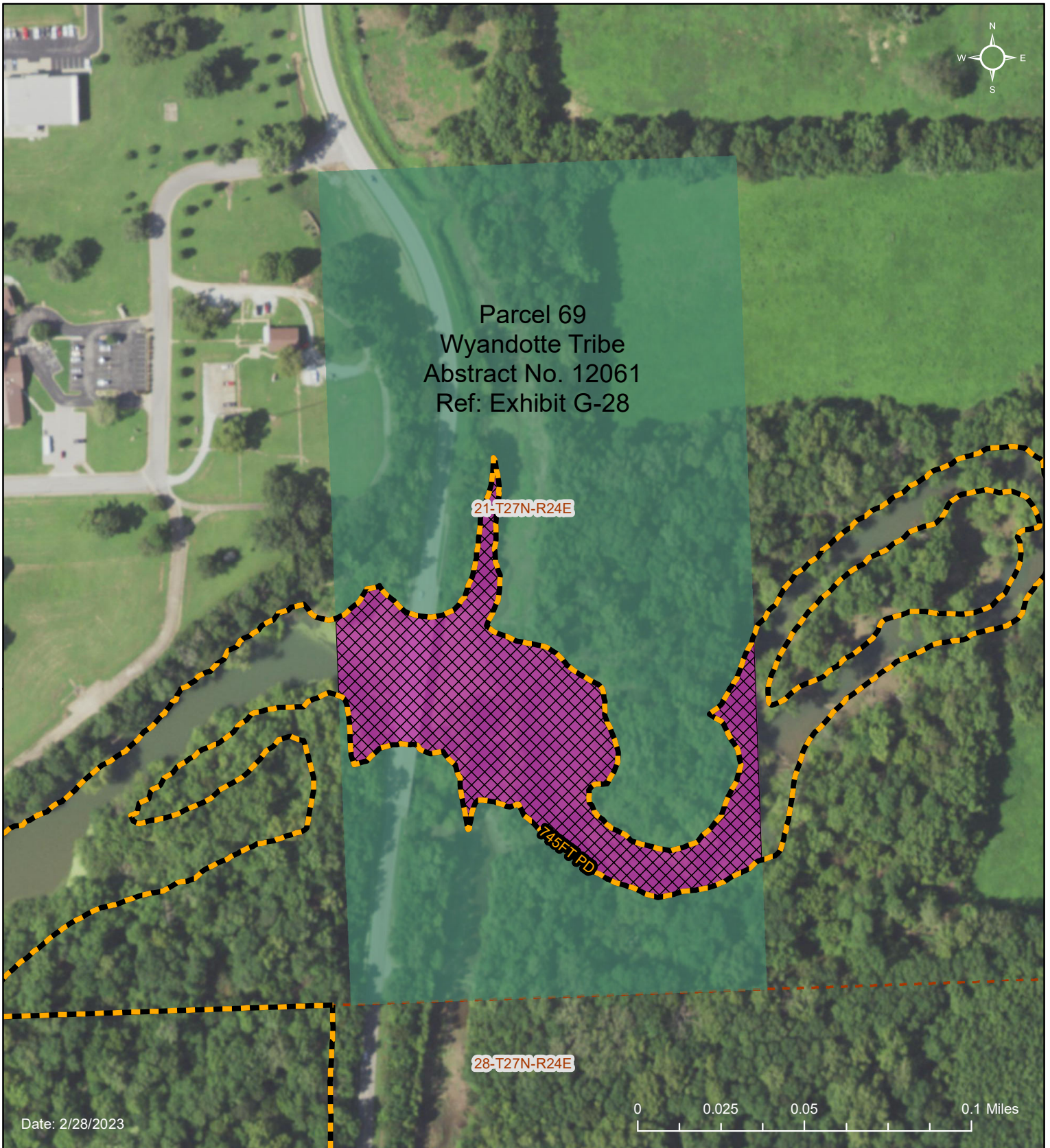
Parcel 68 - Accuracy Adjustment

-  Anticipated Project Boundary
-  Federal Lands in Anticipated Project Boundary
-  Flowage Easement on Federal Lands
-  Parcel 68
-  Section Line

Federal Lands within the Project Boundary: ≈ 4.57 Acres

GRDA holds a flowage easement for all federal lands within the Anticipated Project Boundary for Parcel 68.

The federal acreage is derived from Bureau of Indian Affairs GIS data that has been digitized, adjusted, and recalculated by GRDA in an effort to increase accuracy.



Parcel 69
 Wyandotte Tribe
 Abstract No. 12061
 Ref: Exhibit G-28

21-T27N-R24E






745FT, PD

28-T27N-R24E

Date: 2/28/2023

0 0.025 0.05 0.1 Miles

Parcel 69 - Accuracy Adjustment

-  Anticipated Project Boundary
-  Flowage Easement on Federal Lands
-  Federal Lands in Anticipated Project Boundary
-  Parcel 69
-  Section Line






Federal Lands within the Project Boundary: ≈ 3.39 Acres

GRDA holds a flowage easement for all federal lands within the Anticipated Project Boundary for Parcel 69.

The federal acreage is derived from Bureau of Indian Affairs GIS data that has been digitized, adjusted, and recalculated by GRDA in an effort to increase accuracy.



Parcel M - Accuracy Adjustment

-  Anticipated Project Boundary
-  Federal Lands in Anticipated Project Boundary
-  Flowage Easement on Federal Lands
-  Parcel M
-  Section Line






Federal Lands within the Project Boundary: ≈ 0.07 Acres

GRDA holds a flowage easement for all federal lands within the Anticipated Project Boundary for Parcel M.

The federal acreage is derived from Bureau of Indian Affairs GIS data that has been digitized, adjusted, and recalculated by GRDA in an effort to increase accuracy.



Parcel V - Accuracy Adjustment

-  Anticipated Project Boundary
-  Federal Lands in Anticipated Project Boundary
-  Flowage Easement on Federal Lands
-  Parcel V
-  Section Line

Federal Lands within the Project Boundary: ≈ 0.09 Acres

GRDA holds a flowage easement for all federal lands within the Anticipated Project Boundary for Parcel V.

The federal acreage is derived from Bureau of Indian Affairs GIS data that has been digitized, adjusted, and recalculated by GRDA in an effort to increase accuracy.

Pensacola Hydroelectric Project FERC Project No. 1494

Appendix A-5 Grand River Dam Authority Land Analysis



December 2022

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2. Methods	1
3. Results	2

EXHIBITS

Exhibit 1: Detailed Parcel Maps and Corresponding Title Opinions Pensacola Project
Location

1. Introduction

At the outset of the relicensing effort for the Pensacola Hydroelectric Project (Project), the U.S. Department of the Interior, Bureau of Indian Affairs (BIA) on March 6, 2018 filed with the Commission Trust Maps based on land inventory data contained in the BIA's Trust Asset and Accounting Management System (TAAMS), which contains trust and restricted fee lands of federally-recognized Indian tribes and individual Indians (Bureau of Indian Affairs, 2018). In response, the Commission cited Grand River Dam Authority's (GRDA's) responsibility under federal regulations to identify all lands of the United States as part of its Application for New License:

As the Commission's regulations require, in its final license application, GRDA must provide Exhibit G maps that show a project boundary enclosing all project works and lands necessary for operation and maintenance of the project and other project purposes including recreation, shoreline control, and protection of environmental resources (see 18 C.F.R section 4.41(h)(2)).

Further, the Commission's regulations require that GRDA provide an Exhibit A that describes all lands of the United States that are enclosed within the Project boundary, identified and tabulated by legal subdivisions of a public land survey of the affected area or, in the absence of a public land survey, by the best available legal description (see 18 C.F.R. section 4.51(b)(6)).

Accordingly, GRDA over the past several years has completed a comprehensive review and legal analysis of all lands identified by BIA from its TAAMS report and map provided to the Commission in 2018.

The following is GRDA's report of this effort, together with title work conducted on all parcels identified by BIA occurring within or immediately adjacent to the current Project boundary.

2. Methods

As part of the relicensing process, GRDA has reviewed the Project boundary in an effort to identify lands or interests in land under federal ownership, including "trust or restricted lands" and "trust or restricted interest in land" (collectively, "Trust Land"), which federal law defines as follows:

- (i) "trust or restricted lands" means lands, title to which is held by the United States in trust for an Indian tribe or individual, or which is held by an Indian tribe or individual subject to a restriction by the United States against alienation; and
- (ii) "trust or restricted interest in land" or "trust or restricted interest in a parcel of land" means an interest in land, the title to which is held by an Indian tribe or individual subject to a restriction by the United States against alienation."

25 U.S.C. § 2201(4). In October 2016, as a starting point, GRDA independently reviewed online land records in the county clerk's office and parcel data from the county assessor's office for Delaware, Ottawa, Craig, and Mayes counties for all parcels with a tribal affiliation near the Project boundary.

Based upon GRDA's research, a map was developed to show potential parcels of Trust Land located within the Project boundary.

On February 17, 2017, GRDA sent a letter to BIA requesting information about Trust Land in the above counties near the reservoir and its tributaries. Upon request by the BIA, GRDA narrowed the area of the request to eliminate portions of land based on distance from the Project boundary (e.g., the south half of Section 6, rather than all of Section 6).

Thereafter on June 20, 2017, the BIA e-mailed excel files with legal descriptions of Trust Lands potentially within the Project boundary and GRDA hired a surveyor to create GIS shapefiles for tracts that had been identified as Trust Land. These tracts were then mapped to see what land may lie within the Project boundary. Tracts appearing to lie in the Project boundary were then abstracted and examined by a real estate title attorney.

On August 16, 2018, GRDA met with the BIA to discuss information contained in BIA maps filed with FERC on March 6, 2018. The BIA explained they were still working on the CNM (Could Not Map) tracts requiring further manual research. The BIA stated they would provide updated maps to GRDA within the next month. At that meeting GRDA was advised to contact Cherokee Nation as it maintains its own records. Letters were sent August 21, 2017, and October 24, 2018, to Cherokee Nation requesting information on identifying Tribal Lands for all four counties. On October 30, 2018, Cherokee Nation responded it had sent all its Tribal Land information on April 30, 2018 to the BIA.

On September 18, 2018, the BIA filed supplemental information regarding Trust Land Maps of previous CNM tracts that were now mapped per the BIA. The information filed with FERC by the BIA was compared and combined with GRDA's previous maps to determine any additional areas where it appeared Trust Lands intersected with the Project boundary. Additional abstracts and real estate title examinations were conducted for tracts not already examined.

As part of the development of the Exhibit G maps, GRDA made minor adjustments to the proposed Project boundary, in areas where such adjustments would still maintain within the proposed boundary all lands necessary for Project purposes. In addition, when developing the Exhibit G maps, GRDA identified additional federal lands (federal wetland easements) contained within the proposed Project boundary.

3. Results

As a result of the methods described above, GRDA has enclosed individual maps for each parcel identified by the BIA that it has found either intersecting with, immediately adjacent to, or in close proximity of the anticipated Project boundary. In most cases, GRDA's abstract and title work has found the BIA information provided does not provide detailed enough information to properly map the federal trust land within the Project boundary because GRDA's ownership on the parcels identified by the BIA is not accurate.

The individual maps for the parcels GRDA examined in detail and found to be either intersecting with, immediately adjacent to, or in close proximity of the Project boundary are enclosed for individual review. Even though the BIA information does not appear to be mapped to correspond well with the public land survey system information displayed on each map, for purposes of calculating acres of federal land within the Project boundary in this Draft License Application, GRDA has not tried to rectify the precision of the BIA parcel information. Instead, GRDA has calculated acreage within the Project boundary according to

the parcel boundaries provided by BIA. As part of preparing the Final License Application, GRDA intends to consult with BIA to make further refinements, as appropriate.

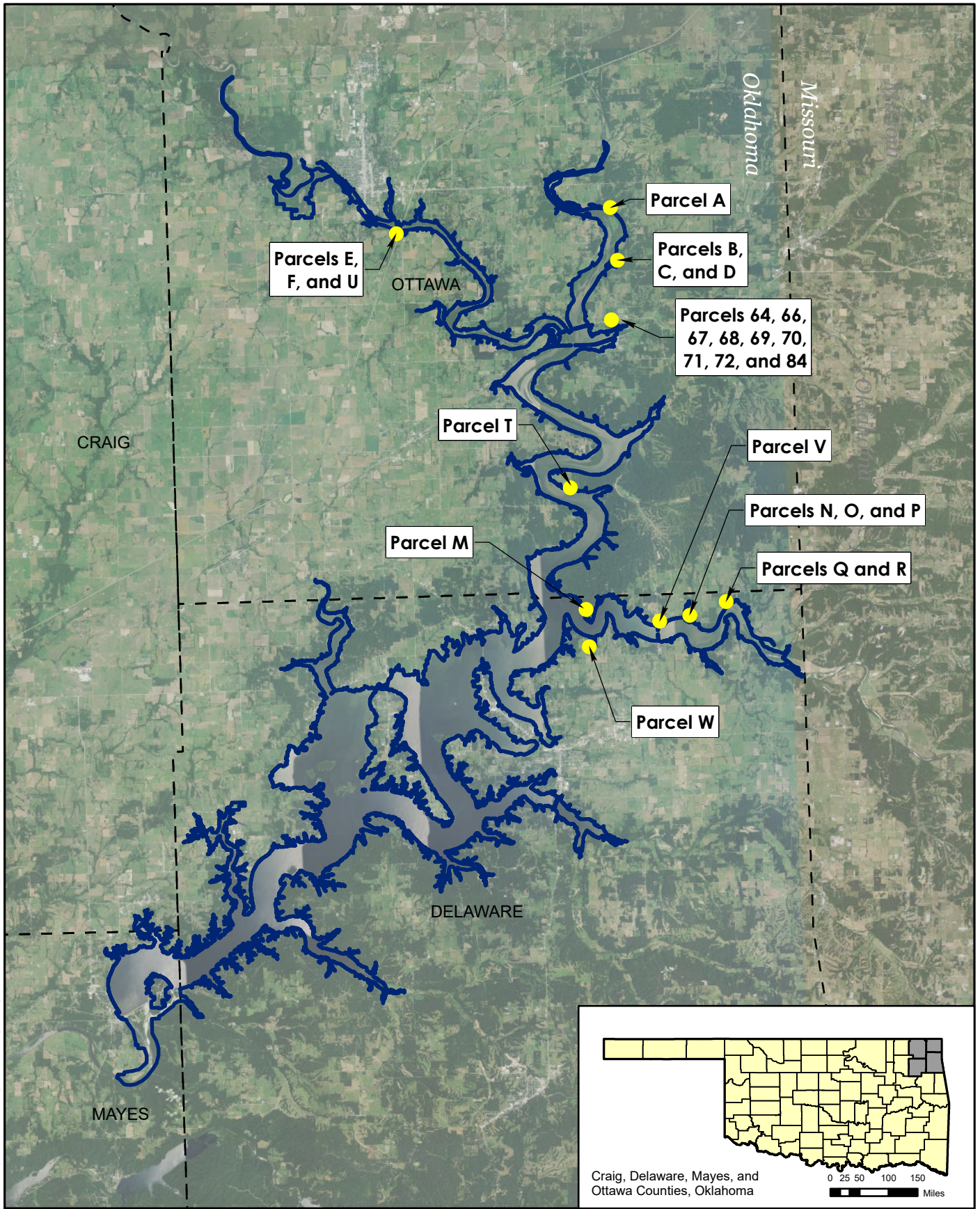
The title and abstract work completed by GRDA results in a total of 8.06 acres¹ of Trust Land held in trust by the BIA within the proposed Project boundary. GRDA holds a flowage easement for all 8.06 acres of Trust Land within the proposed Project boundary.




The individual detailed maps and title opinions are enclosed in Exhibit 1.

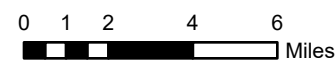
¹ This acreage figure is based upon land ownership files provided by BIA. GRDA used the BIA data as it was provided without adjustment for difference in coordinate system, projection, or digitizing accuracies. As shown on the maps displayed in Exhibit 1 of Appendix A-5 of this application, the location of the parcels may be shifted and are not mapped as precisely as the background data. This can lead to inaccurate acreage calculations. GRDA will discuss this situation with the BIA and agree upon a solution to be displayed in the FLA.

Exhibit 1 - Detailed Parcel Maps and Corresponding Title Opinions

Service Layer Credit: https://gis.apfo.usda.gov/arcgis/rest/services/NAIP/USDA_CONUS_PRIME/ImageServer



-  BIA Parcels
-  Anticipated Project Boundary
-  Oklahoma County Boundary






Pensacola Hydroelectric Project

General locations where GRDA examined BIA provided information

FERC No. 1494



Parcel 64 - Federal Lands (BIA)

-  Anticipated Project Boundary (750FT NGVD29)
-  Parcel 64
-  Section Line

Federal Lands within the Project Boundary: 0 Acres

LAW OFFICES OF
MORROW, WATSON, JAMES, AND WEEDN

A PROFESSIONAL CORPORATION

21 SOUTH MAIN P.O. BOX 1168

MIAMI, OKLAHOMA 74355

TEL. 918-542-5501 FAX 918-542-5400

Jay Office:

510 KRAUSE STREET P.O. BOX 1018

JAY, OK 74346

TEL. 918-253-6208 FAX 918-253-6209

COY DEAN MORROW
DENNIS J. WATSON
*RICHARD D. JAMES
JOHN M. WEEDN

* Admitted to practice in
Oklahoma & Missouri

March 23, 2018

Ms. Tamara Jahnke, Esquire
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Ottawa County Abstract and Title Company Abstract No. 12056
Covering: E ½ SE ¼ SE ¼ in Section 20, Township 27 North, Range 24 East
of the Indian Base and Meridian, Ottawa County, Oklahoma;
Our File No. 21463

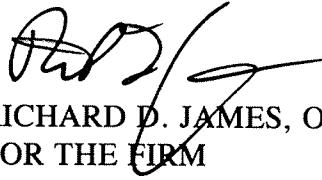
Dear Ms. Jahnke:

We have completed examination of the above referenced abstract of title. This parcel was conveyed by Trust Patent and subsequently by full patent without restrictions in 1917 to Catherine Crotzer by instruments shown at page 4 and 6 of the abstract and recorded in Book 12 at Page 127 and Book 163 at Page 787, respectively. The property was then acquired by John Crotzer from the heirs of Catherine Crotzer through a partition action which resulted in the Sheriff's Deed shown at page 47 of the abstract and recorded June 4, 1945 in Book 187 at Page 745. The property was acquired by J. Howard Meadows and Alta Louise Meadows in 1960 by the Administrator's Deed shown at page 58 of the abstract shown at page 36 of the abstract, and recorded in Book 276 at Page 941. In 2014, The Wyandotte Tribe acquired the property by means of the Warranty Deed shown at page 137 of the abstract and recorded in Book 998 at Page 599. In 2015, the Tribe conveyed the property to the USA, in Trust for the benefit of the Tribe by means of the Warranty Deed shown at page 138 of the abstract, recorded in Book 1021 at Page 571.

A flowage Easement over the subject premises appears at page 16 of the abstract and is recorded in Book 180 at Page 521. This easement was acquired by condemnation by the United States of America, and grants a perpetual easement to "inundate, submerge, and flow" over all of the subject premises lying below elev. 760 sea level datum.

The creation of the flowage easement predated by some seventy years the transfer of the subject premises to the Secretary of the Interior for the benefit of the Wyandotte Tribe, and the property had been free from any restrictions on transfer for almost one hundred years at the time. Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of the property lying below elevation 760 sea level datum, by virtue of the easement acquired by condemnation.

Very truly yours,






A handwritten signature in black ink, appearing to read "RDJ", with a long horizontal flourish extending to the right.

RICHARD D. JAMES, OBA No. 4617
FOR THE FIRM

RDJ/le
Enc.



Parcel 66 - Federal Lands (BIA)

-  Anticipated Project Boundary
-  Federal Lands in Anticipated Project Boundary
-  GRDA Flowage Easement
-  Parcel 66
-  Section Line

Federal Lands within the Project Boundary: ≈ 0.01 Acres

GRDA holds a flowage easement for all federal lands within the Anticipated Project Boundary for Parcel 66.

The federal acreage is calculated based on GIS data from Bureau of Indian Affairs (BIA) tracts provided to GRDA.

GRDA used the BIA data as it was provided without adjustment for difference in coordinate system, projection, or digitizing inaccuracies. The unadjusted BIA data can lead to inaccurate land acreages. GRDA will work with the BIA to address the discrepancy for the FLA.

LAW OFFICES OF
MORROW, WATSON, JAMES, AND WEEDN

A PROFESSIONAL CORPORATION

21 SOUTH MAIN P.O. BOX 1168

MIAMI, OKLAHOMA 74355

TEL. 918-542-5501 FAX 918-542-5400

Jay Office:

510 KRAUSE STREET P.O. BOX 1018

JAY, OK 74346

TEL. 918-253-6208 FAX 918-253-6209

COY DEAN MORROW
DENNIS J. WATSON
*RICHARD D. JAMES
JOHN M. WEEDN

* Admitted to practice in
Oklahoma & Missouri

March 22, 2018

Ms. Tamara Jahnke, Esquire
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Ottawa County Abstract and Title Company Abstract No. 12057
Covering: E ½ SW ¼ SW ¼ in Section 21, Township 27 North, Range 24 East of
the Indian Base and Meridian, Ottawa County, Oklahoma;
Our File No. 21463

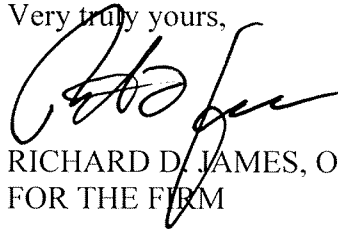
Dear Ms. Jahnke:

We have completed examination of the above referenced abstract of title. This parcel, along with the other four parcels which we have examined to date, were part of the property formerly owned by the United States of America and utilized in the operation of the now defunct Seneca Indian Boarding School. An illuminative description of the background and history of the acquisition of these lands by the Federal Government is contained in the decision of Administrative Law Judge Franklin E. Arness which appears at pages 41-53 of the abstract. As set forth therein, a portion of these properties were withheld for school purposes from allotment during the 1890's by the Wyandotte Tribe and purchased by the government from the Tribe in 1934 for purposes of operation of the boarding school. The remaining properties were purchased from various private land owners by the government during the 1940's and also utilized by the boarding school. Upon the closing of the Seneca Indian Boarding School in 1981, all of these properties were transferred to the Secretary of the Interior to be held in trust for the benefit and use of the Wyandotte Tribe of Oklahoma. This transfer is shown at page 32 of the abstract, recorded in Book 977 at Page 275.

A Flowage Easement over the subject premises appears at page 22 of the abstract, and is recorded in Book 180 at Page 521. This easement was acquired by condemnation by the United States of America, and provides for a perpetual right to "inundate, submerge, and flow" over all of the subject premises lying below elevation 760 sea level datum.

The creation of the flowage easement predated the transfer of the subject premises to the Secretary of the Interior for the benefit of the Wyandotte Tribe, and the transfer was specifically made subject to the Flowage Easement of the Southwestern Power Administration. Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of the property lying below elevation 760 sea level datum, by virtue of the easement acquired by condemnation.

Very truly yours,




A handwritten signature in black ink, appearing to read "Richard D. James", written over the typed name below.

RICHARD D. JAMES, OBA No. 4617
FOR THE FIRM

RDJ/kc
Enc.



Parcel 67 - Federal Lands (BIA)

-  Anticipated Project Boundary (745FT PD)
-  Parcel 67
-  Section Line

Federal Lands within the Project Boundary: 0 Acres

LAW OFFICE OF
MORROW, WATSON, & JAMES
A PROFESSIONAL CORPORATION
21 SOUTH MAIN P.O. BOX 1168
MIAMI, OKLAHOMA 74355
TEL. 918-542-5501 FAX. 918-542-5400

COY DEAN MORROW
DENNIS J. WATSON
*RICHARD D. JAMES

Of Counsel
**HON. ROBERT E. REAVIS II
Admitted to practice in
*Oklahoma & Missouri
**Oklahoma & Kansas

Jay Office:
510 KRAUSE STREET
JAY, OK 74346
TEL. 918-253-6208 FAX 918-253-6209

August 31, 2022

Ms. Tamara Jahnke, Esquire
Assistant General Counsel, Grand River Dam Authority
P.O. Box 70
Langley, OK 74350

Re: Photo Abstract Company Abstract No. 18833
Covering: SE¼ NE¼ SE¼ in Section 21, Township 27 North, Range 24 East
of the Indian Base and Meridian, Ottawa County, Oklahoma;
Our File No. 21463

Dear Ms. Jahnke:

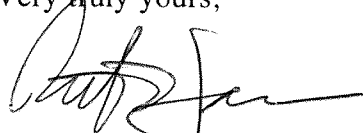
We have completed examination of the above referenced abstract of title. All of the property was transferred by the original Wyandotte allottee free of restrictions by means of the BIA approved Warranty Deed shown at page 7 of the abstract and recorded in Book R at Page 273, a copy of which is attached as Ex. No. 1. That portion of this parcel lying South of Lost Creek was part of the property formerly owned by the United States of America and utilized in the operation of the now defunct Seneca Indian Boarding School. An illuminative description of the background and history of the acquisition of these lands by the Federal Government is contained in the decision of Administrative Law Judge Franklin E. Arness which appears at pages 37-49 of the abstract. As set forth therein, a portion of the lands within the former Wyandotte Reservation were withheld for school purposes from allotment during the 1890's by the Wyandotte Tribe and purchased by the government from the Tribe in 1934 for purposes of operation of the boarding school. Other properties, including that portion of the subject premises lying South of Lost Creek, were purchased from various private land owners by the government during the 1940's and also utilized by the boarding school, by means of the Warranty Deed shown at page 34 of the abstract, recorded in Book 194 at Page 597, a copy of which is attached hereto as Exhibit No. 2. Upon the closing of the Seneca Indian Boarding School in 1981, all of these properties were transferred to the Secretary of the Interior to be held in trust for the benefit and use of the Wyandotte Tribe of Oklahoma. This transfer is shown at page 35 of the abstract, recorded in Book 977 at Page 275, a copy of which is attached hereto as Exhibit No. 3. That portion of the property lying North of Lost

Creek is in unrestricted private ownership, by virtues of the Deeds shown at pages 149 and 204 of the abstract, copies attached as Exhibits 7 and 8.

A flowage Easement over the subject premises appears at page 16 of the abstract and is recorded in Book 169 at Page 507, a copy of which is attached as Exhibit No. 4., a second easement was acquired by condemnation by the United States of America, and grants a perpetual easement to “inundate, submerge, and flow” over all of the subject premises lying below elev. 760 sea level datum, as per the terms of the Journal Entry of Judgment shown at page 20 of the abstract, recorded in Book 180 at Page 521, a copy of which is attached hereto as Exhibit No. 5.

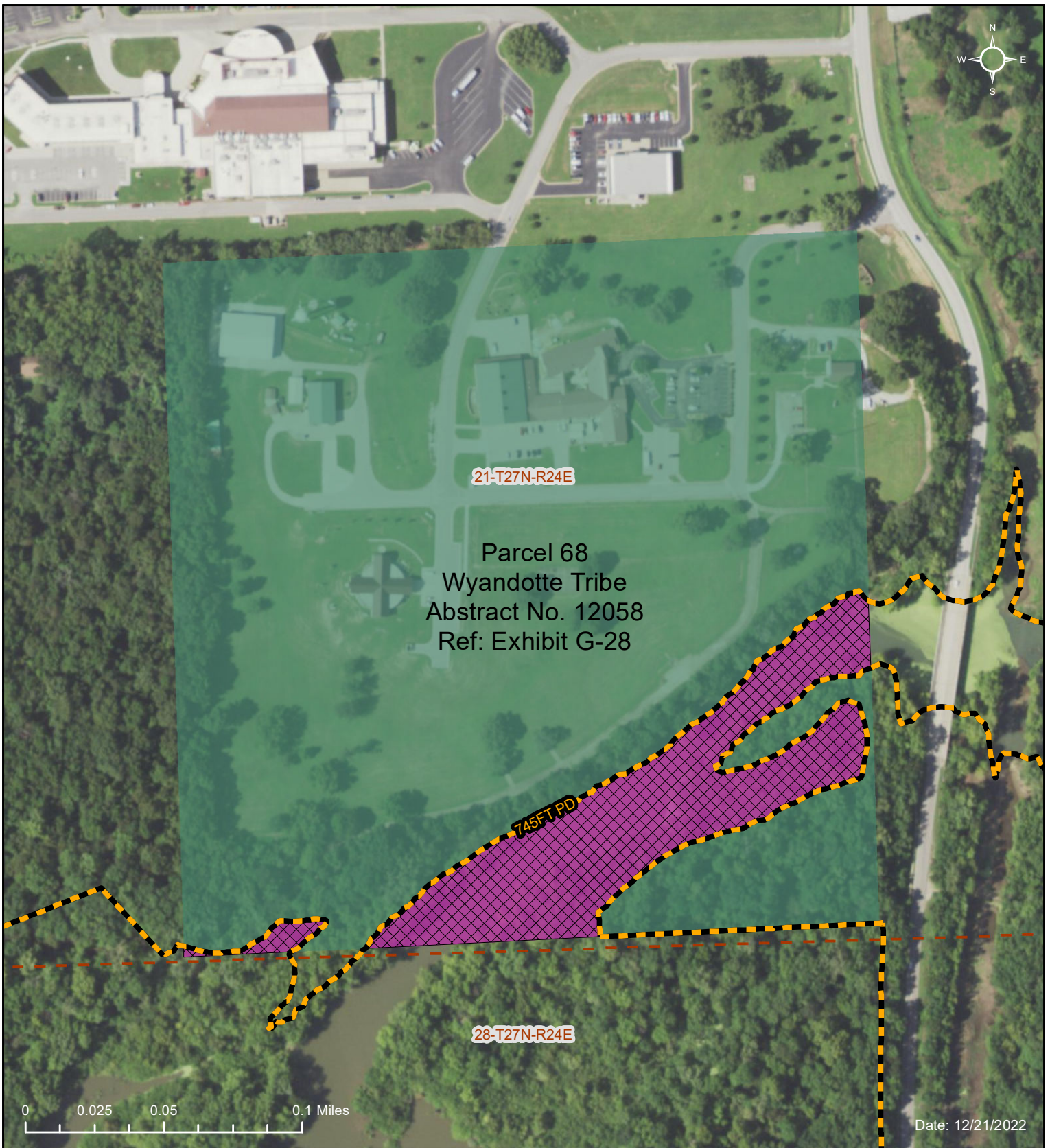
The creation of the flowage easement predated the transfer of the subject premises to the Secretary of the Interior for the benefit of the Wyandotte Tribe, and the transfer was specifically made subject to the latter. Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of the property lying below elevation 760 sea level datum, by virtue of the easement acquired by condemnation. It should also be noted that GRDA owns in fee simple that portion of the property described in the Judgment appearing at page 11 of the abstract and recorded in Book 166 at Page 910, a copy of which is attached hereto as Exhibit No. 6.

Very truly yours,








RICHARD D. JAMES, OBA No. 4617
FOR THE FIRM

RDJ/kf
Enc.



Parcel 68 - Federal Lands (BIA)

-  Anticipated Project Boundary (745FT PD)
-  Federal Lands in Anticipated Project Boundary
-  Flowage Easement on Federal Lands
-  Parcel 68
-  Section Line

Federal Lands within the Project Boundary: ≈ 4.80 Acres

GRDA holds a flowage easement for all federal lands within the Anticipated Project Boundary for Parcel 68.

The federal acreage is calculated based on GIS data from Bureau of Indian Affairs (BIA) tracts provided to GRDA.

GRDA used the BIA data as it was provided without adjustment for difference in coordinate system, projection, or digitizing inaccuracies. The unadjusted BIA data can lead to inaccurate land acreages. GRDA will work with the BIA to address the discrepancy for the FLA.

LAW OFFICES OF
MORROW, WATSON, JAMES, AND WEEDN

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COY DEAN MORROW
DENNIS J. WATSON
*RICHARD D. JAMES
JOHN M. WEEDN

* Admitted to practice in
Oklahoma & Missouri

March 22, 2018

Ms. Tamara Jahnke, Esquire
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Ottawa County Abstract and Title Company Abstract No. 12058
Covering: SE ¼ SW ¼ and NE ¼ SW ¼ all in Section 21, Township 27 North,
Range 24 East of the Indian Base and Meridian, Ottawa County, Oklahoma;
Our File No. 21463

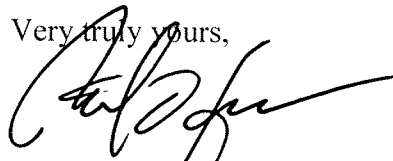
Dear Ms. Jahnke:

We have completed examination of the above referenced abstract of title. This parcel, along with the other four parcels which we have examined to date, were part of the property formerly owned by the United States of America and utilized in the operation of the now defunct Seneca Indian Boarding School. An illuminative description of the background and history of the acquisition of these lands by the Federal Government is contained in the decision of Administrative Law Judge Franklin E. Arness which appears at pages 23-35 of the abstract. As set forth therein, a portion of these properties were withheld for school purposes from allotment during the 1890's by the Wyandotte Tribe and purchased by the government from the Tribe in 1934 for purposes of operation of the boarding school. The remaining properties were purchased from various private land owners by the government during the 1940's and also utilized by the boarding school. Upon the closing of the Seneca Indian Boarding School in 1981, all of these properties were transferred to the Secretary of the Interior to be held in trust for the benefit and use of the Wyandotte Tribe of Oklahoma. This transfer is shown at page 20 of the abstract, recorded in Book 977 at Page 275.

A Flowage Easement over the subject premises appears at page 5 of the abstract, and is recorded in Book 171 at Page 304. This easement was created by act of congress of June 11, 1940 in favor of the Grand River Dam Authority.

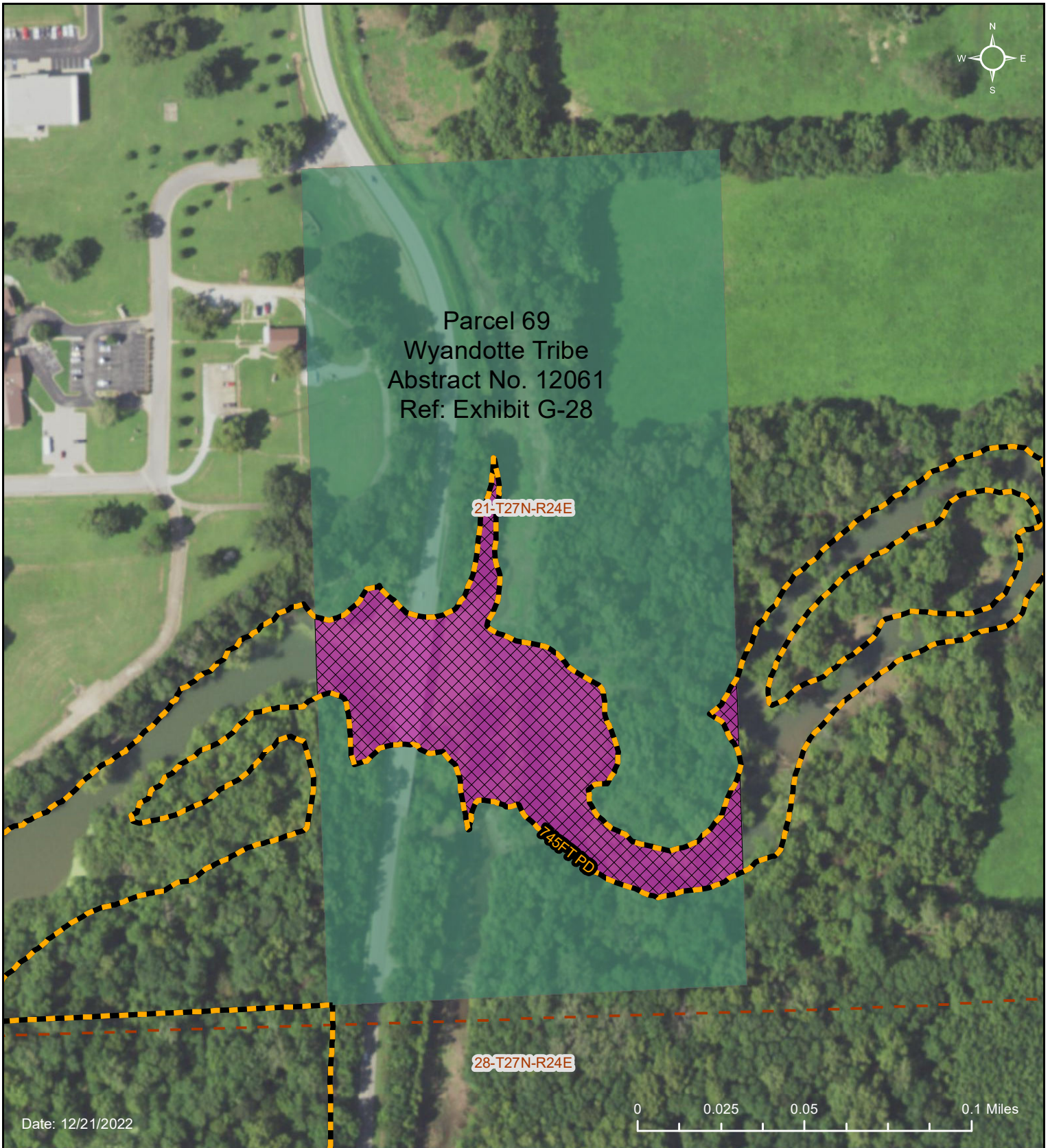
The creation of the flowage easement predated the transfer of the subject premises to the Secretary of the Interior for the benefit of the Wyandotte Tribe, and the transfer was specifically made subject to the same. Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over that portion of the subject premises described by metes and bounds in the easement shown at page 5 of the abstract, consisting of approximately 26.7 acres.

Very truly yours,

A handwritten signature in black ink, appearing to read "Richard D. James", written in a cursive style.






RICHARD D. JAMES, OBA No. 4617
FOR THE IURM

RDJ/kc
Enc.



Date: 12/21/2022

Parcel 69 - Federal Lands (BIA)

-  Anticipated Project Boundary (745FT PD)
-  Federal Lands in Anticipated Project Boundary
-  Flowage Easement on Federal Lands
-  Parcel 69
-  Section Line

Federal Lands within the Project Boundary: ≈ 3.09 Acres

GRDA holds a flowage easement for all federal lands within the Anticipated Project Boundary for Parcel 69.

The federal acreage is calculated based on GIS data from Bureau of Indian Affairs (BIA) tracts provided to GRDA.

GRDA used the BIA data as it was provided without adjustment for difference in coordinate system, projection, or digitizing inaccuracies. The unadjusted BIA data can lead to inaccurate land acreages. GRDA will work with the BIA to address the discrepancy for the FLA.

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*RICHARD D. JAMES
JOHN M. WEEDN

* Admitted to practice in
Oklahoma & Missouri

March 22, 2018

Ms. Tamara Jahnke, Esquire
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Ottawa County Abstract and Title Company Abstract No. 12061
Covering: W ½ SW ¼ SE ¼ in Section 21, Township 27 North, Range 24 East of
the Indian Base and Meridian, Ottawa County, Oklahoma;
Our File No. 21463

Dear Ms. Jahnke:

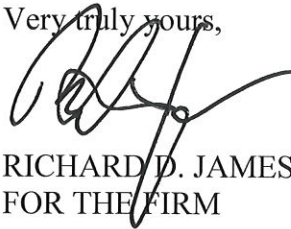
We have completed examination of the above referenced abstract of title. This parcel, along with the other four parcels which we have examined to date, were part of the property formerly owned by the United States of America and utilized in the operation of the now defunct Seneca Indian Boarding School. An illuminative description of the background and history of the acquisition of these lands by the Federal Government is contained in the decision of Administrative Law Judge Franklin E. Arness which appears at pages 43-55 of the abstract. As set forth therein, a portion of these properties were withheld for school purposes from allotment during the 1890's by the Wyandotte Tribe and purchased by the government from the Tribe in 1934 for purposes of operation of the boarding school. The remaining properties were purchased from various private land owners by the government during the 1940's and also utilized by the boarding school. Upon the closing of the Seneca Indian Boarding School in 1981, all of these properties were transferred to the Secretary of the Interior to be held in trust for the benefit and use of the Wyandotte Tribe of Oklahoma. This transfer is shown at page 40 of the abstract, recorded in Book 977 at Page 275.

Flowage Easements over the subject premises appear at pages 5 and 6 of the abstract, and are recorded in Book 171 at Page 304 and Book 180 at Page 521. The first of these easements was created by act of congress of June 11, 1940 in favor of the Grand River Dam Authority. The second easement was acquired by condemnation by the United States of America, shown at page 6 of the abstract and recorded in Book 180 at Page 521,

and subsequently assigned to the Grand River Dam Authority by assignment appearing at Page 20 of the abstract and recorded in Book 201 at Page 127.

The creation of both flowage easements predated the transfer of the subject premises to the Secretary of the Interior for the benefit of the Wyandotte Tribe, and the transfer was specifically made subject to the latter. Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has valid and subsisting flowage easements over that portion of the subject premises described by metes and bounds in the easement shown at page 5 of the abstract and over all of the remainder of the property lying below elevation 760 sea level datum, by virtue of the easement acquired by condemnation.

Very truly yours,

A handwritten signature in black ink, appearing to read 'RDJ', with a long horizontal flourish extending to the right.

RICHARD D. JAMES, OBA No. 4617
FOR THE FIRM

RDJ/kc
Enc.



Parcel 70
Wyandotte Tribe
Abstract No. 12062
Ref: Exhibit G-28





21-T27N-R24E

28-T27N-R24E

0 0.025 0.05 0.1 Miles

Date: 12/16/2022

Parcel 70 - Federal Lands (BIA)

-  Anticipated Project Boundary (745FT PD)
-  GRDA Owned Land
-  Parcel 70
-  Section Line

Federal Lands within the Project Boundary: 0 Acres

GRDA owns all the property within the Anticipated Project Boundary for Parcel 70.

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COY DEAN MORROW
DENNIS J. WATSON
*RICHARD D. JAMES
JOHN M. WEEDN

* Admitted to practice in
Oklahoma & Missouri

March 22, 2018

Ms. Tamara Jahnke, Esquire
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Ottawa County Abstract and Title Company Abstract No. 12062
Covering: E ½ SW ¼ SE ¼ in Section 21, Township 27 North, Range 24 East of
the Indian Base and Meridian, Ottawa County, Oklahoma;
Our File No. 21463

Dear Ms. Jahnke:

We have completed examination of the above referenced abstract of title. This parcel, along with the other four parcels which we have examined to date, were part of the property formerly owned by the United States of America and utilized in the operation of the now defunct Seneca Indian Boarding School. An illuminative description of the background and history of the acquisition of these lands by the Federal Government is contained in the decision of Administrative Law Judge Franklin E. Arness which appears at pages 130-142 of the abstract. As set forth therein, a portion of these properties were withheld for school purposes from allotment during the 1890's by the Wyandotte Tribe and purchased by the government from the Tribe in 1934 for purposes of operation of the boarding school. The remaining properties were purchased from various private land owners by the government during the 1940's and also utilized by the boarding school. Upon the closing of the Seneca Indian Boarding School in 1981, all of these properties were transferred to the Secretary of the Interior to be held in trust for the benefit and use of the Wyandotte Tribe of Oklahoma. This transfer is shown at page 127 of the abstract, recorded in Book 977 at Page 275.

A Flowage Easement over the subject premises appears at page 39 of the abstract, and is recorded in Book 180 at Page 521. This easement was acquired by condemnation by the United States of America, and provides for a perpetual right to "inundate, submerge, and flow" over all of the subject premises lying below elevation 760 sea level datum and subsequently assigned to the Grand River Dam Authority by assignment appearing at Page 53 of the abstract and recorded in Book 201 at Page 127.

The creation of both the flowage easement and the assignment to GRDA predated the transfer of the subject premises to the Secretary of the Interior for the benefit of the Wyandotte Tribe. Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of the remainder of the property lying below elevation 760 sea level datum, by virtue of the easement acquired by condemnation. Also, it should be noted that the GRDA owns in fee simple that portion of the premises described in the Warranty Deed shown at page 13 of the abstract and recorded in Book 163 at Page 332.

Very truly yours,

A handwritten signature in black ink, appearing to read 'RDJ', with a long horizontal flourish extending to the right.

RICHARD D. JAMES, OBA No. 4617
FOR THE FIRM

RDJ/kc
Enc.



21-T27N-R24E

22-T27N-R24E

Parcel 71
Wyandotte Tribe
Abstract No. 12063
Ref: Exhibit G-28





28-T27N-R24E

27-T27N-R24E

0 0.025 0.05 0.1 Miles

Date: 12/19/2022

Parcel 71 - Federal Lands (BIA)

-  Anticipated Project Boundary (745FT PD)
-  GRDA Owned Land
-  Parcel 71
-  Section Line

Federal Lands within the Project Boundary: 0 Acres

GRDA owns all the property within the Anticipated Project Boundary for Parcel 71.

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*RICHARD D. JAMES
JOHN M. WEEDN

* Admitted to practice in
Oklahoma & Missouri

March 23, 2018

Ms. Tamara Jahnke, Esquire
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Ottawa County Abstract and Title Company Abstract No. 12063
Covering: SE ¼ SE ¼ in Section 21, Township 27 North, Range 24 East
of the Indian Base and Meridian, Ottawa County, Oklahoma;
Our File No. 21463

Dear Ms. Jahnke:

We have completed examination of the above referenced abstract of title. This parcel, along with the other four parcels which we have examined to date, were part of the property formerly owned by the United States of America and utilized in the operation of the now defunct Seneca Indian Boarding School. An illuminative description of the background and history of the acquisition of these lands by the Federal Government is contained in the decision of Administrative Law Judge Franklin E. Arness which appears at pages 43-55 of the abstract. As set forth therein, a portion of these properties were withheld for school purposes from allotment during the 1890's by the Wyandotte Tribe and purchased by the government from the Tribe in 1934 for purposes of operation of the boarding school. The remaining properties were purchased from various private land owners by the government during the 1940's and also utilized by the boarding school. Upon the closing of the Seneca Indian Boarding School in 1981, all of these properties were transferred to the Secretary of the Interior to be held in trust for the benefit and use of the Wyandotte Tribe of Oklahoma. This transfer is shown at page 36 of the abstract, recorded in Book 977 at Page 275.

A flowage Easement over the subject premises appears at page 18 of the abstract and is recorded in Book 180 at Page 521. This easement was acquired by condemnation

by the United States of America, and grants a perpetual easement to “inundate, submerge, and flow” over all of the subject premises lying below elev. 760 sea level datum.

The creation of the flowage easement predated the transfer of the subject premises to the Secretary of the Interior for the benefit of the Wyandotte Tribe, and the transfer was specifically made subject to the latter. Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of the property lying below elevation 760 sea level datum, by virtue of the easement acquired by condemnation. It should also be noted that GRDA owns in fee simple that portion of the property described in the Warranty Deed appearing at page 14 of the abstract and recorded in Book 163 at Page 332.

Very truly yours,



RICHARD D. JAMES, OBA No. 4617
FOR THE FIRM

RDJ/le
Enc.






21-T27N-R24E

Parcel 72
Wyandotte Tribe
Abstract No. 12058
Ref: Exhibit G-28

0 0.05 0.1 0.2 Miles

Date: 12/14/2022

Parcel 72 - Federal Lands (BIA)

-  Anticipated Project Boundary
-  Parcel 72
-  Section Line

Federal Lands within the Project Boundary: 0 Acres

LAW OFFICES OF
MORROW, WATSON, JAMES, AND WEEDN

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COY DEAN MORROW
DENNIS J. WATSON
*RICHARD D. JAMES
JOHN M. WEEDN

* Admitted to practice in
Oklahoma & Missouri

March 22, 2018

Ms. Tamara Jahnke, Esquire
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Ottawa County Abstract and Title Company Abstract No. 12058
Covering: SE ¼ SW ¼ and NE ¼ SW ¼ all in Section 21, Township 27 North,
Range 24 East of the Indian Base and Meridian, Ottawa County, Oklahoma;
Our File No. 21463

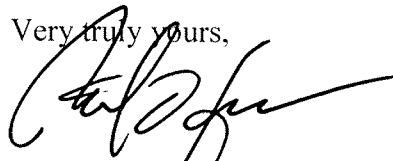
Dear Ms. Jahnke:

We have completed examination of the above referenced abstract of title. This parcel, along with the other four parcels which we have examined to date, were part of the property formerly owned by the United States of America and utilized in the operation of the now defunct Seneca Indian Boarding School. An illuminative description of the background and history of the acquisition of these lands by the Federal Government is contained in the decision of Administrative Law Judge Franklin E. Arness which appears at pages 23-35 of the abstract. As set forth therein, a portion of these properties were withheld for school purposes from allotment during the 1890's by the Wyandotte Tribe and purchased by the government from the Tribe in 1934 for purposes of operation of the boarding school. The remaining properties were purchased from various private land owners by the government during the 1940's and also utilized by the boarding school. Upon the closing of the Seneca Indian Boarding School in 1981, all of these properties were transferred to the Secretary of the Interior to be held in trust for the benefit and use of the Wyandotte Tribe of Oklahoma. This transfer is shown at page 20 of the abstract, recorded in Book 977 at Page 275.

A Flowage Easement over the subject premises appears at page 5 of the abstract, and is recorded in Book 171 at Page 304. This easement was created by act of congress of June 11, 1940 in favor of the Grand River Dam Authority.

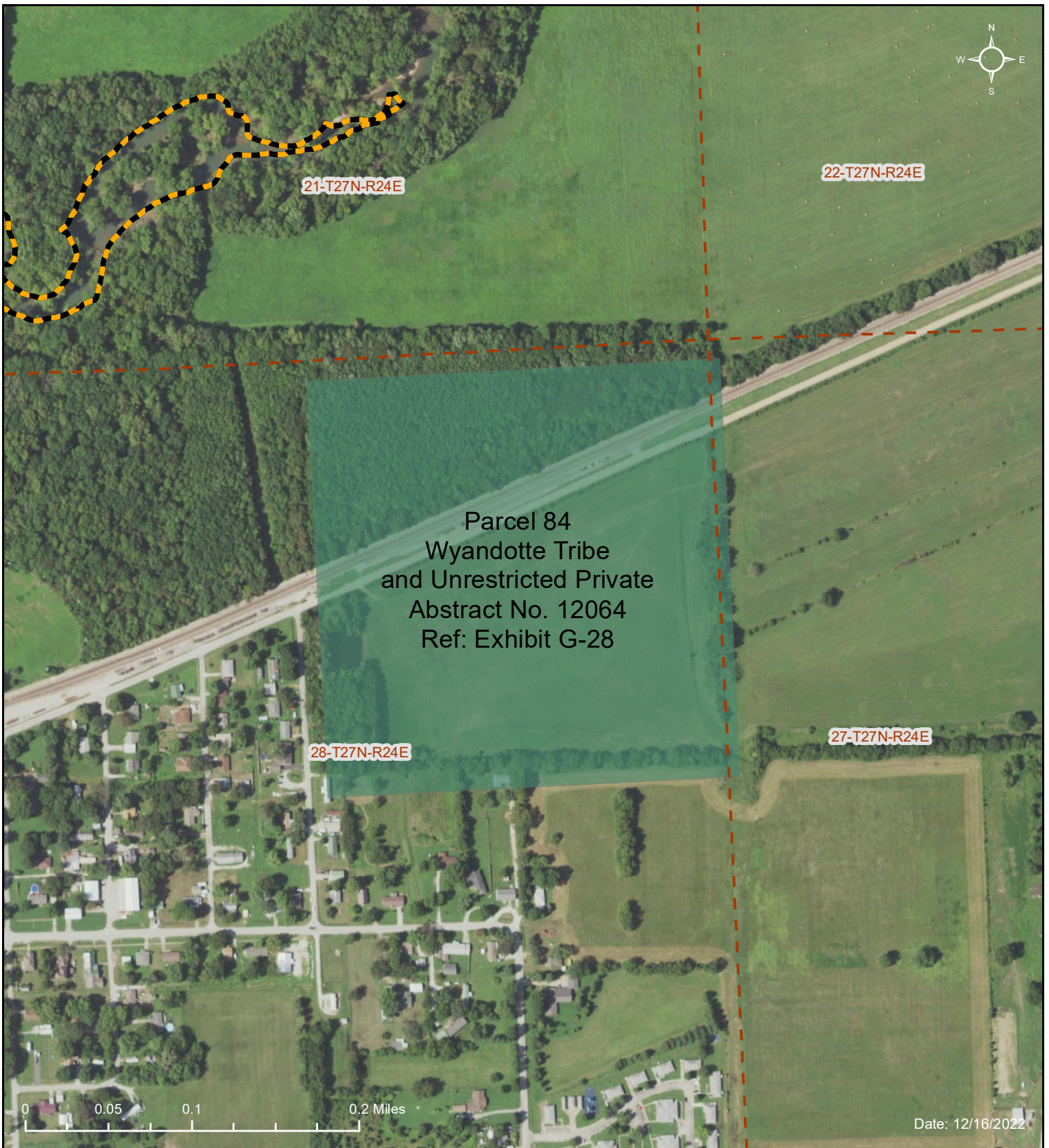
The creation of the flowage easement predated the transfer of the subject premises to the Secretary of the Interior for the benefit of the Wyandotte Tribe, and the transfer was specifically made subject to the same. Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over that portion of the subject premises described by metes and bounds in the easement shown at page 5 of the abstract, consisting of approximately 26.7 acres.

Very truly yours,




A handwritten signature in black ink, appearing to read 'Richard D. James', written in a cursive style.

RICHARD D. JAMES, OBA No. 4617
FOR THE IIRM

RDJ/kc
Enc.



Parcel 84 - Federal Lands (BIA)

-  Anticipated Project Boundary
-  Parcel 84
-  Section Line

Federal Lands within the Project Boundary: 0 Acres

LAW OFFICES OF
MORROW, WATSON, JAMES, AND WEEDN

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21 SOUTH MAIN P.O. BOX 1168

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COY DEAN MORROW
DENNIS J. WATSON
*RICHARD D. JAMES
JOHN M. WEEDN

* Admitted to practice in
Oklahoma & Missouri

April 3, 2018

Ms. Tamara Jahnke, Esquire
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Ottawa County Abstract and Title Company Abstract No. 12064
Covering: NE ¼ NE ¼ in Section 28, Township 27 North, Range 24 East
of the Indian Base and Meridian, Ottawa County, Oklahoma;
Our File No. 21463

Dear Ms. Jahnke:

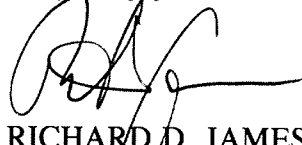
We have completed examination of the above referenced abstract of title. This parcel was conveyed by Trust Patent with restrictions subsequently removed in 1892 to Mary E. Brown and James A. Brown by instruments shown at page 4 and 6 of the abstract and recorded in Book 12 at Page 117 and Book 8 at Page 559, respectively. The portion of the property North of the Railroad Right of Way has remained in private ownership and is now owned by Susan Victor by virtue of a Probate Decree shown at page 326 of the abstract and a Warranty Deed shown at page 347, which are recorded in Book 863 at Page 724 and 740. The property south of the Railroad Right of Way remained in private ownership until 2005, when the Wyandotte Tribe acquired the property by means of the Warranty Deed shown at page 233 of the abstract and recorded in Book 796 at Page 485. In 2014, the Tribe conveyed the property to the USA, in Trust for the benefit of the Tribe by means of the Warranty Deed shown at page 260 of the abstract, recorded in Book 994 at Page 422.

A flowage Easement over the subject premises south of the Railroad Right of Way appears at page 43 of the abstract and is recorded in Book 181 at Page 179. This easement was acquired by condemnation by the United States of America, and grants a perpetual easement to "inundate, submerge, and flow" over all of the subject premises lying below

elev. 760 sea level datum. At page 49 of the abstract appears a Flowage Easement granted to GRDA by the St. Louis-San Francisco Railway Co., covering all railroad right of way and other property lying below elev. 755 sea level datum recorded in Book 214 at Page 147. No Flowage Easement appears of record covering the property north of the Railroad Right of Way.

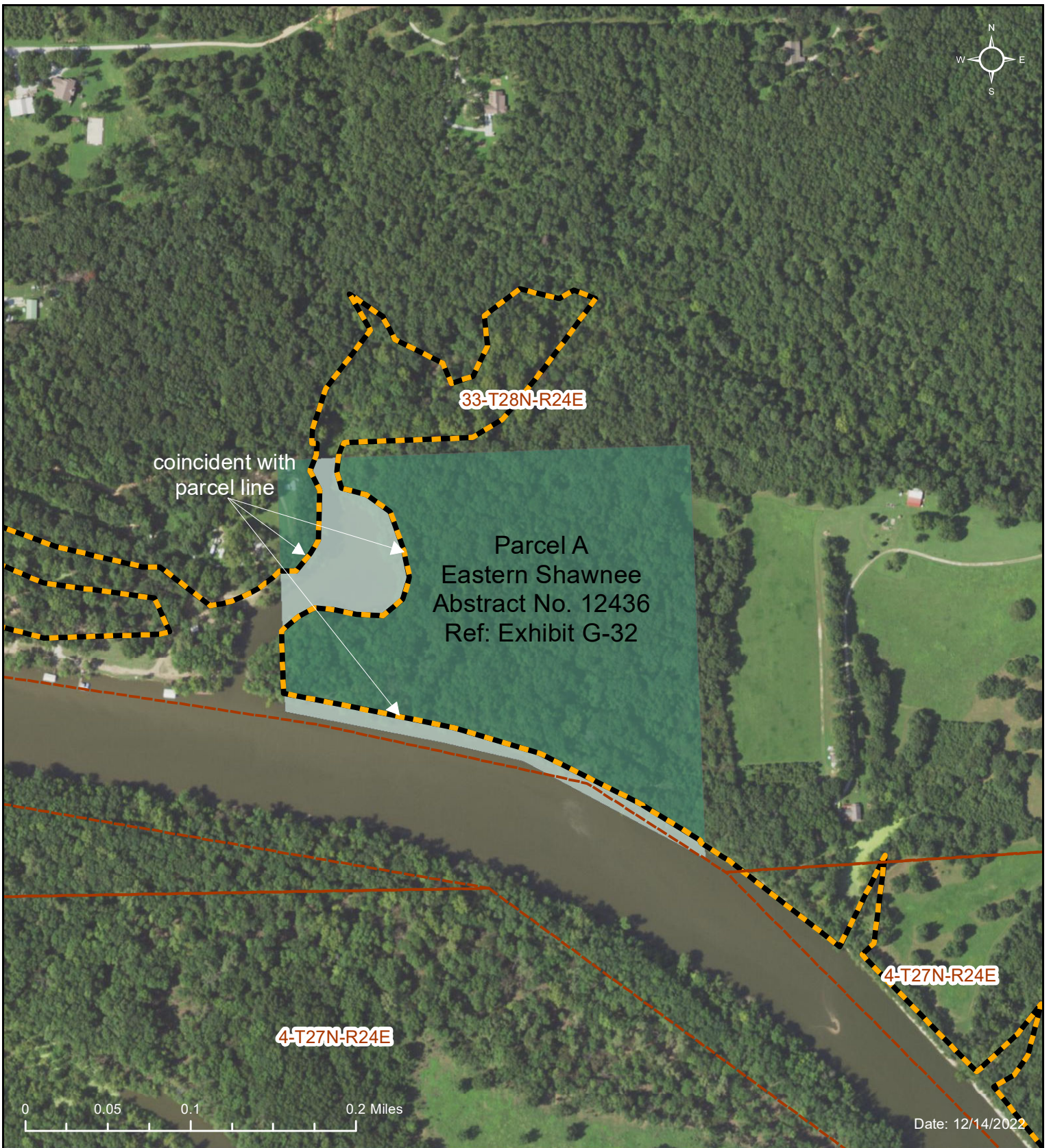
The creation of the flowage easement predated by some seventy years the transfer of the subject premises to the Secretary of the Interior for the benefit of the Wyandotte Tribe, and the property had been free from any restrictions on transfer for almost one hundred years at the time. Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of the property south of the Railroad Right of Way, lying below elevation 760 sea level datum, by virtue of the easement acquired by condemnation, and below elevation 755 sea level datum on the Railroad Right of Way portion of the premises by virtue of the easement granted by the St. Louis-San Francisco Railway Co. We find no flowage easement north of the Railroad Right of Way.

Very truly yours,





A handwritten signature in black ink, appearing to be 'R.D. James', written over a horizontal line.

RICHARD D. JAMES, OBA No. 4617
FOR THE FIRM

RDJ/le
Enc.



Parcel A - Federal Lands (BIA)

-  Anticipated Project Boundary
-  GRDA Owned Land
-  Parcel A
-  Section Line

Federal Lands within the Project Boundary: 0 Acres

GRDA owns all the property within the Anticipated Project Boundary for Parcel A.

COY DEAN MORROW
DENNIS J. WATSON
*RICHARD D. JAMES

Of Counsel
**HON. ROBERT E. REAVIS II
Admitted to practice in
*Oklahoma & Missouri
**Oklahoma & Kansas

LAW OFFICE OF
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December 26, 2019

Ms. Tamara Jahnke, Esq.
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Ottawa County Abstract and Title Company Abstract No. 12436,
Volumes I and II,
Covering: Lots 1, 2 and 3 (S $\frac{1}{2}$ SW $\frac{1}{4}$) of Section 33, Township 28 North,
Range 24 East of the Indian Meridian, Ottawa County Oklahoma.
Our File No. 21463

Dear Ms. Jahnke:

We have completed examination of the above referenced abstract of title, consisting of 424 pages, and last certified as of 12/20/19 at 7:55 A.M. Lot 1 was conveyed by Trust Patent to Eastern Shawnee allottee, Milton Turkeyfoot, by an instrument shown at page 4 of the abstract. GRDA acquired fee simple title to all of Lot 1 lying below elev. 750, consisting of 9.3 acres, by a BIA approved Warranty Deed shown at page 5 of the abstract. The remainder of Lot 1 was conveyed by Fee Simple Patent shown at page 22 of the abstract to Matilda Stand Beaver. This instrument is recorded in Book 274 at Page 454. Title appears now to be vested in Jan Colbort Killough and Bobbie Rae Killough pursuant to the probate Order shown at page 29 of the abstract and recorded in Book 294 at Page 224, and is unrestricted as per the terms of the BIA Certification shown at page 190 of the abstract and recorded in Book 893 at Page 288.

Lot 2 was conveyed by Trust Patent to Eastern Shawnee allottee, Minnie Turkeyfoot by an instrument shown at page 367 of the abstract. GRDA acquired fee simple title to all of Lot 2 lying below elev. 750, consisting of 9.0 acres by a BIA approved Indian Deed shown at page 374 of the abstract. Title to the remainder of Lot 2 is unclear, but appears to remain restricted and vested in highly

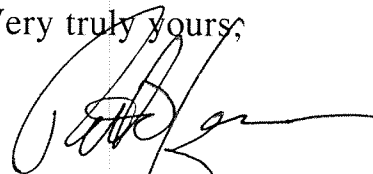
fractionalized interests in the heirs of Minnie Turkeyfoot Robbins, and their descendants.

Lot 3 was conveyed by Trust Patent to Ottawa allottee Matilda Wind, by an instrument shown at page 398 of the abstract, and subsequently conveyed free of all restrictions by a BIA approved Warranty Deed shown at page 399 of the abstract. GRDA thereafter acquired fee simple title to all of Lot 3 in 1940 by means of a Warranty Deed shown at page 422 of the abstract, and recorded in Book 163 at Page 846.

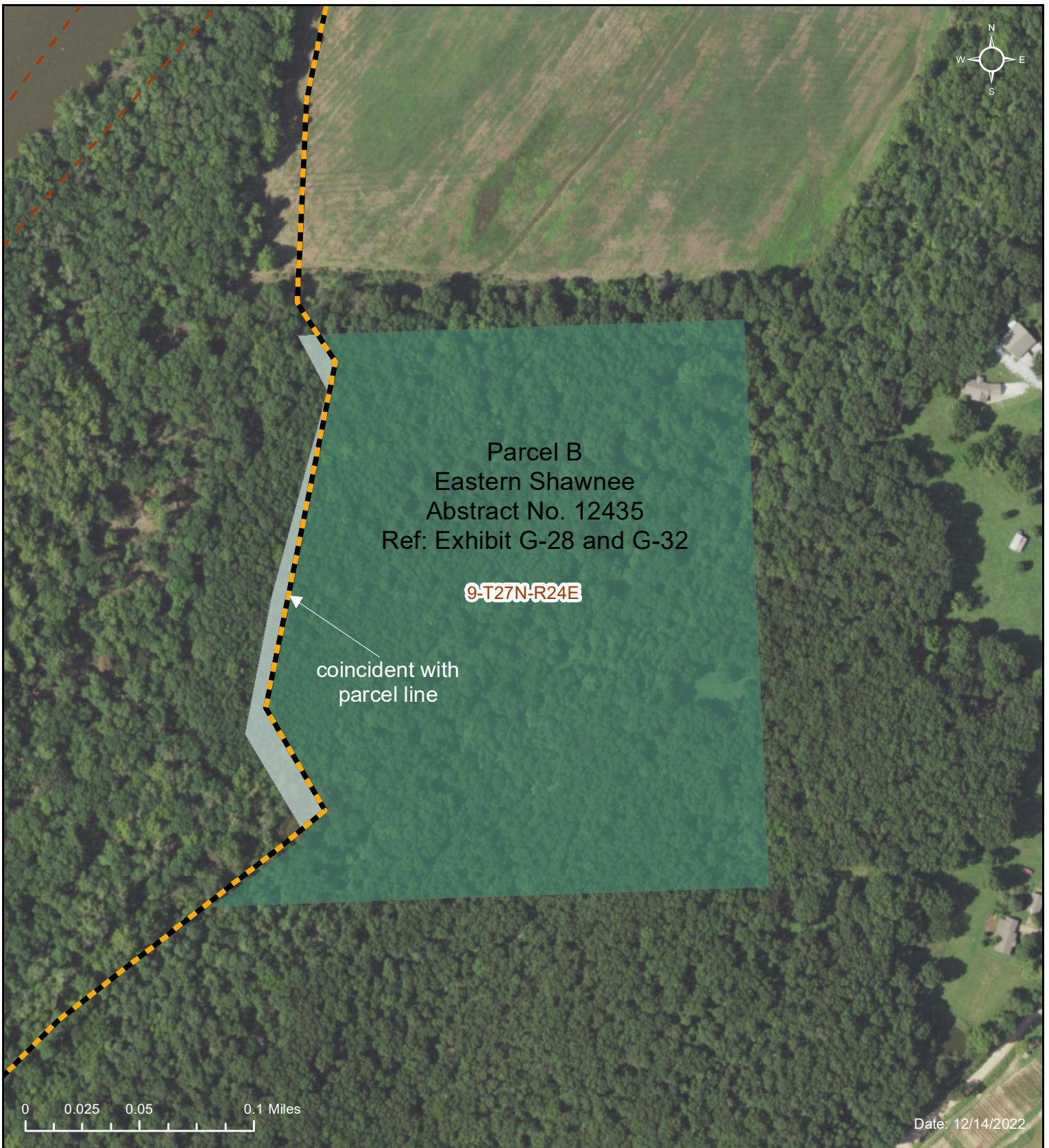
A flowage easement over Lots 1 and 2 of the subject premises appears at page 7 of the abstract and is recorded in Book 180 at Page 744. This easement was acquired by condemnation by the United States of America in 1944 and grants a perpetual easement to “inundate, submerge, and flow” over all of the subject premises, lying below elevation 760 sea level datum.

Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of Lots 1 and 2 of the property lying below elevation 760 sea level datum, by virtue of the easement acquired by condemnation, and owns in fee simple that portion which lies below elevation 750 sea level datum. Grand River Dam Authority owns all of Lot 3 in fee simple.





Very truly yours,



RICHARD D. JAMES,
OBA No. 4617
FOR THE FIRM



Parcel B - Federal Lands (BIA)

-  Anticipated Project Boundary
-  GRDA Owned Land
-  Parcel B
-  Section Line

Federal Lands within the Project Boundary: 0 Acres

GRDA owns all property within the Anticipated Boundary for Parcel B.

LAW OFFICE OF
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DENNIS J. WATSON
*RICHARD D. JAMES

Of Counsel
** HON. ROBERT E. REAVIS II
Admitted to practice in
*Oklahoma & Missouri
**Oklahoma & Kansas

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March 11, 2020

Ms. Tamara Jahnke, Esq.
Assistant General Counsel, Grand River Dam Authority
9933 East 16th Street
Tulsa, OK 74128

Re: Ottawa County Abstract and Title Company Abstract No. 12435,
Volumes I and II,
Covering: S1/2; and Sw1/4 NE1/4 of Section 9, Township 27 North,
Range 24 East of the Indian Meridian, Ottawa County Oklahoma.
Our File No. 21463

Dear Ms. Jahnke:

We have completed examination of the above referenced abstract of title, consisting of 572 pages, and last certified as of 03/04/20 at 7:55 A.M. Lot 7, or that part of the NW1/4 SW1/4 lying West of Spring River, was conveyed by unrestricted Patent, by an instrument shown at page 515 of the abstract, and recorded in Book 99 at Page 852. GRDA acquired fee simple title to all of Lot 7, by a BIA approved Warranty Deed shown at page 542 of the abstract, and recorded in Book 163 at Page 10. The remainder of the NW1/4 SW1/4, or Lot 3, along with the SW1/4 NE1/4 and NE1/4 SW1/4, was conveyed by Allotment Deed shown at page 474 of the abstract to Eastern Shawnee allottee, Carrie Bluejacket. This instrument is recorded in Book 164 at Page 99. Title continues to be restricted and vested in the remote descendants of the allottee. At page 475 appears a BIA approved Warranty Deed to GRDA conveying Fee Simple Title to all of the NW1/4 SW1/4 (Lot 3), NE1/ SW1/4, and SW1/4 NE1/4 lying below elev. 750.

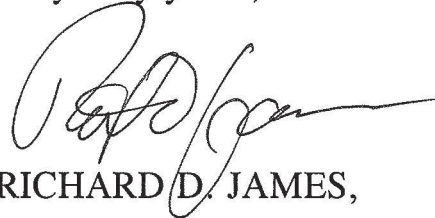
The NE1/4 SE1/4 was conveyed by Trust Patent to Eastern Shawnee allottee, Amy Bluejacket by an instrument shown at page 4 of the abstract, and recorded in Book 118 at Page 769. Restrictions were removed by an instrument shown at page 5 of the abstract and recorded in Book 115 at Page 219. A Flowage Easement to the USA covering all of the NE1/4 SE1/4 lying below elev 760 appears at page 27 of the abstract and is recorded in Book 181 at Page 179. The S1/2 SW1/4 was conveyed to Blanche Bluejacket by Trust Patent shown at page 202 of the abstract, and recorded in Book 128 at Page 846. Restrictions were subsequently removed by instruments shown at pages 205, 365 and 378 of the abstract. GRDA acquired fee simple title to all of the S1/2 SW1/4 lying below elev 750 by instruments shown at pages 209 and 360 of the abstract, which are recorded in Book 162 at Page 949 and Book 163 at Page 596.

Title to the remainder of the SE1/4 was conveyed by Trust Patent to Eastern Shawnee allottees, Rose and Anna Skakah by instruments shown at pages 488 and 495 of the abstract, and subsequently conveyed with all restrictions by a BIA approved Warranty Deed shown at page 510 of the abstract, to Willie Blakeburn, restricted Indian, and current record owner, which is recorded in Book 326 at Page 923. GRDA thereafter acquired fee simple title to all of the W1/2 SW1/4 SE1/4 lying below elev 750 by means of a BIA approved Warranty Deed shown at page 497 of the abstract, and recorded in Book 166 at Page 34, and a Flowage Easement on all of the E1/2 SW1/4 SE1/4 lying below elev 750 by means of a BIA approved instrument shown at page 491 of the abstract and recorded in Book 173 at Page 406. This grant of Easement is problematic in that it only covers property below elev. 750, title to which is held by GRDA in fee simple. This is probably the result of a typographical error showing 750 instead of the intended 760.

A flowage easement over the remainder of the subject premises appears at page 499 of the abstract and is recorded in Book 180 at Page 521. This easement was acquired by condemnation by the United States of America in 1944 and grants a perpetual easement to "inundate, submerge, and flow" over all of the subject premises, lying below elevation 760 sea level datum.

Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of the property lying below elevation 760 sea level datum, with the exception of the E1/2 SW1/4 SE1/4 as set forth above, by virtue of the easement acquired by grant and condemnation, and owns in fee simple that portion which lies below elevation 750 sea level datum. The USA holds title to the NW/14 SE1/4, SW1/4 SE1/4, SE1/4 SE1/4, SW1/4 NE1/4, NE1/4 SW1/4, and NW1/4 SW1/4 lying East of Spring River in Trust for the benefit of restricted Indians as above set forth.

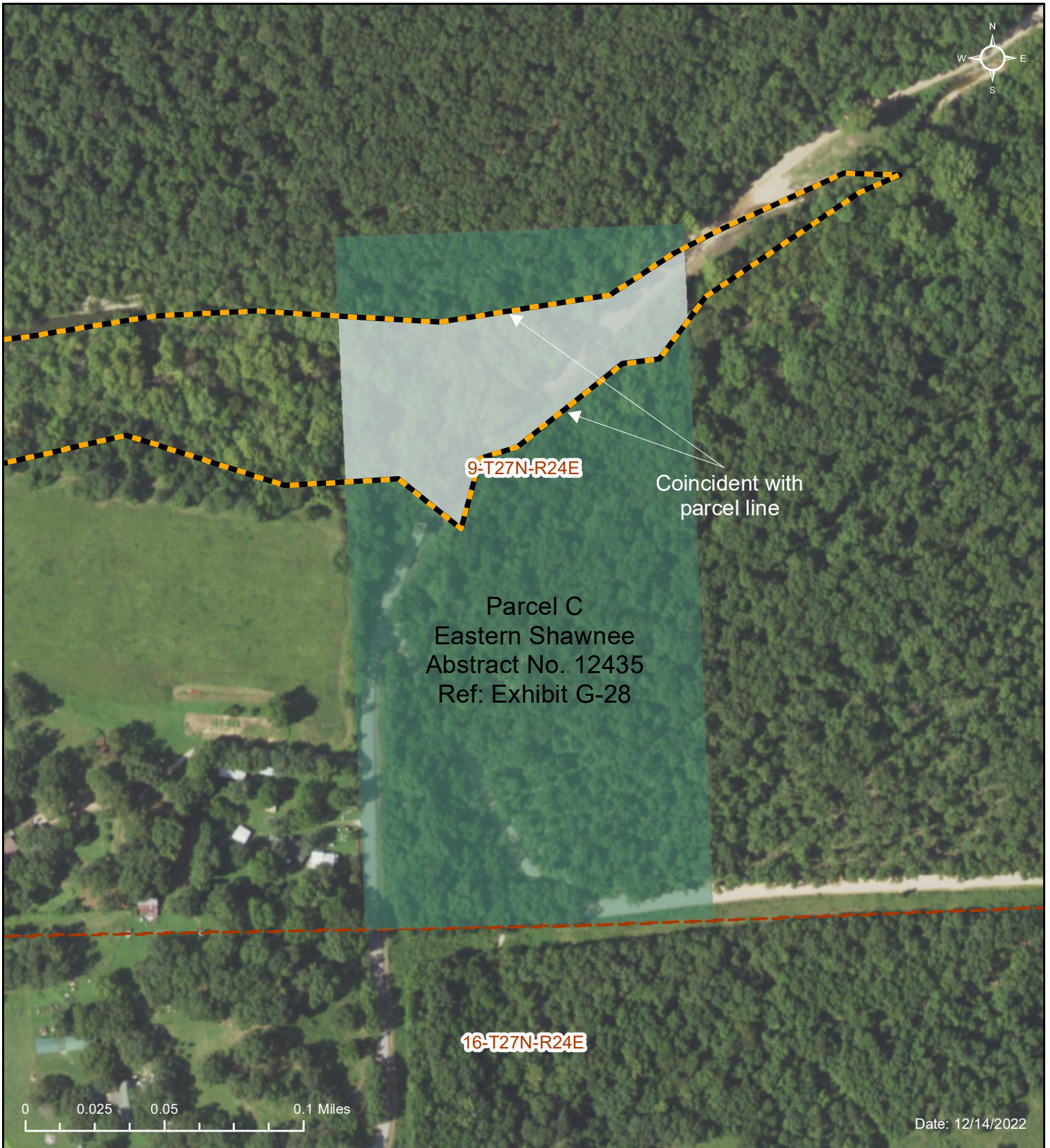
Very truly yours,

A handwritten signature in black ink, appearing to read 'Richard D. James', with a long horizontal flourish extending to the right.





RICHARD D. JAMES,

OBA No. 4617

FOR THE FIRM



Parcel C - Federal Lands (BIA)

-  Anticipated Project Boundary
-  GRDA Owned Land
-  Parcel C
-  Section Line

Federal Lands within the Project Boundary: 0 Acres

GRDA owns all the property within the Anticipated Project Boundary for Parcel C.

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COY DEAN MORROW
DENNIS J. WATSON
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Admitted to practice in
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**Oklahoma & Kansas

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March 11, 2020

Ms. Tamara Jahnke, Esq.
Assistant General Counsel, Grand River Dam Authority
9933 East 16th Street
Tulsa, OK 74128

Re: Ottawa County Abstract and Title Company Abstract No. 12435,
Volumes I and II,
Covering: S1/2; and Sw1/4 NE1/4 of Section 9, Township 27 North,
Range 24 East of the Indian Meridian, Ottawa County Oklahoma.
Our File No. 21463

Dear Ms. Jahnke:

We have completed examination of the above referenced abstract of title, consisting of 572 pages, and last certified as of 03/04/20 at 7:55 A.M. Lot 7, or that part of the NW1/4 SW1/4 lying West of Spring River, was conveyed by unrestricted Patent, by an instrument shown at page 515 of the abstract, and recorded in Book 99 at Page 852. GRDA acquired fee simple title to all of Lot 7, by a BIA approved Warranty Deed shown at page 542 of the abstract, and recorded in Book 163 at Page 10. The remainder of the NW1/4 SW1/4, or Lot 3, along with the SW1/4 NE1/4 and NE1/4 SW1/4, was conveyed by Allotment Deed shown at page 474 of the abstract to Eastern Shawnee allottee, Carrie Bluejacket. This instrument is recorded in Book 164 at Page 99. Title continues to be restricted and vested in the remote descendants of the allottee. At page 475 appears a BIA approved Warranty Deed to GRDA conveying Fee Simple Title to all of the NW1/4 SW1/4 (Lot 3), NE1/ SW1/4, and SW1/4 NE1/4 lying below elev. 750.

The NE1/4 SE1/4 was conveyed by Trust Patent to Eastern Shawnee allottee, Amy Bluejacket by an instrument shown at page 4 of the abstract, and recorded in Book 118 at Page 769. Restrictions were removed by an instrument shown at page 5 of the abstract and recorded in Book 115 at Page 219. A Flowage Easement to the USA covering all of the NE1/4 SE1/4 lying below elev 760 appears at page 27 of the abstract and is recorded in Book 181 at Page 179. The S1/2 SW1/4 was conveyed to Blanche Bluejacket by Trust Patent shown at page 202 of the abstract, and recorded in Book 128 at Page 846. Restrictions were subsequently removed by instruments shown at pages 205, 365 and 378 of the abstract. GRDA acquired fee simple title to all of the S1/2 SW1/4 lying below elev 750 by instruments shown at pages 209 and 360 of the abstract, which are recorded in Book 162 at Page 949 and Book 163 at Page 596.

Title to the remainder of the SE1/4 was conveyed by Trust Patent to Eastern Shawnee allottees, Rose and Anna Skakah by instruments shown at pages 488 and 495 of the abstract, and subsequently conveyed with all restrictions by a BIA approved Warranty Deed shown at page 510 of the abstract, to Willie Blakeburn, restricted Indian, and current record owner, which is recorded in Book 326 at Page 923. GRDA thereafter acquired fee simple title to all of the W1/2 SW1/4 SE1/4 lying below elev 750 by means of a BIA approved Warranty Deed shown at page 497 of the abstract, and recorded in Book 166 at Page 34, and a Flowage Easement on all of the E1/2 SW1/4 SE1/4 lying below elev 750 by means of a BIA approved instrument shown at page 491 of the abstract and recorded in Book 173 at Page 406. This grant of Easement is problematic in that it only covers property below elev. 750, title to which is held by GRDA in fee simple. This is probably the result of a typographical error showing 750 instead of the intended 760.

A flowage easement over the remainder of the subject premises appears at page 499 of the abstract and is recorded in Book 180 at Page 521. This easement was acquired by condemnation by the United States of America in 1944 and grants a perpetual easement to "inundate, submerge, and flow" over all of the subject premises, lying below elevation 760 sea level datum.

Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of the property lying below elevation 760 sea level datum, with the exception of the E1/2 SW1/4 SE1/4 as set forth above, by virtue of the easement acquired by grant and condemnation, and owns in fee simple that portion which lies below elevation 750 sea level datum. The USA holds title to the NW/14 SE1/4, SW1/4 SE1/4, SE1/4 SE1/4, SW1/4 NE1/4, NE1/4 SW1/4, and NW1/4 SW1/4 lying East of Spring River in Trust for the benefit of restricted Indians as above set forth.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Richard D. James', with a long horizontal flourish extending to the right.

RICHARD D. JAMES,

OBA No. 4617

FOR THE FIRM



Coincident with
parcel line

9-T27N-R24E





Parcel D
Eastern Shawnee
Abstract No. 12435
Ref: Exhibit G-28

16-T27N-R24E

0 0.025 0.05 0.1 Miles

Date: 12/14/2022

Parcel D - Federal Lands (BIA)

-  Anticipated Project Boundary
-  GRDA Owned Land
-  Parcel D
-  Section Line

Federal Lands within the Project Boundary: 0 Acres

GRDA owns all the property within the Anticipated Project Boundary for Parcel D.

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COY DEAN MORROW
DENNIS J. WATSON
*RICHARD D. JAMES

Of Counsel
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**Oklahoma & Kansas

Jay Office:
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JAY, OK 74346
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March 11, 2020

Ms. Tamara Jahnke, Esq.
Assistant General Counsel, Grand River Dam Authority
9933 East 16th Street
Tulsa, OK 74128

Re: Ottawa County Abstract and Title Company Abstract No. 12435,
Volumes I and II,
Covering: S1/2; and Sw1/4 NE1/4 of Section 9, Township 27 North,
Range 24 East of the Indian Meridian, Ottawa County Oklahoma.
Our File No. 21463

Dear Ms. Jahnke:

We have completed examination of the above referenced abstract of title, consisting of 572 pages, and last certified as of 03/04/20 at 7:55 A.M. Lot 7, or that part of the NW1/4 SW1/4 lying West of Spring River, was conveyed by unrestricted Patent, by an instrument shown at page 515 of the abstract, and recorded in Book 99 at Page 852. GRDA acquired fee simple title to all of Lot 7, by a BIA approved Warranty Deed shown at page 542 of the abstract, and recorded in Book 163 at Page 10. The remainder of the NW1/4 SW1/4, or Lot 3, along with the SW1/4 NE1/4 and NE1/4 SW1/4, was conveyed by Allotment Deed shown at page 474 of the abstract to Eastern Shawnee allottee, Carrie Bluejacket. This instrument is recorded in Book 164 at Page 99. Title continues to be restricted and vested in the remote descendants of the allottee. At page 475 appears a BIA approved Warranty Deed to GRDA conveying Fee Simple Title to all of the NW1/4 SW1/4 (Lot 3), NE1/ SW1/4, and SW1/4 NE1/4 lying below elev. 750.

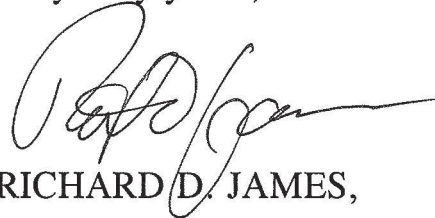
The NE1/4 SE1/4 was conveyed by Trust Patent to Eastern Shawnee allottee, Amy Bluejacket by an instrument shown at page 4 of the abstract, and recorded in Book 118 at Page 769. Restrictions were removed by an instrument shown at page 5 of the abstract and recorded in Book 115 at Page 219. A Flowage Easement to the USA covering all of the NE1/4 SE1/4 lying below elev 760 appears at page 27 of the abstract and is recorded in Book 181 at Page 179. The S1/2 SW1/4 was conveyed to Blanche Bluejacket by Trust Patent shown at page 202 of the abstract, and recorded in Book 128 at Page 846. Restrictions were subsequently removed by instruments shown at pages 205, 365 and 378 of the abstract. GRDA acquired fee simple title to all of the S1/2 SW1/4 lying below elev 750 by instruments shown at pages 209 and 360 of the abstract, which are recorded in Book 162 at Page 949 and Book 163 at Page 596.

Title to the remainder of the SE1/4 was conveyed by Trust Patent to Eastern Shawnee allottees, Rose and Anna Skakah by instruments shown at pages 488 and 495 of the abstract, and subsequently conveyed with all restrictions by a BIA approved Warranty Deed shown at page 510 of the abstract, to Willie Blakeburn, restricted Indian, and current record owner, which is recorded in Book 326 at Page 923. GRDA thereafter acquired fee simple title to all of the W1/2 SW1/4 SE1/4 lying below elev 750 by means of a BIA approved Warranty Deed shown at page 497 of the abstract, and recorded in Book 166 at Page 34, and a Flowage Easement on all of the E1/2 SW1/4 SE1/4 lying below elev 750 by means of a BIA approved instrument shown at page 491 of the abstract and recorded in Book 173 at Page 406. This grant of Easement is problematic in that it only covers property below elev. 750, title to which is held by GRDA in fee simple. This is probably the result of a typographical error showing 750 instead of the intended 760.

A flowage easement over the remainder of the subject premises appears at page 499 of the abstract and is recorded in Book 180 at Page 521. This easement was acquired by condemnation by the United States of America in 1944 and grants a perpetual easement to "inundate, submerge, and flow" over all of the subject premises, lying below elevation 760 sea level datum.

Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of the property lying below elevation 760 sea level datum, with the exception of the E1/2 SW1/4 SE1/4 as set forth above, by virtue of the easement acquired by grant and condemnation, and owns in fee simple that portion which lies below elevation 750 sea level datum. The USA holds title to the NW/14 SE1/4, SW1/4 SE1/4, SE1/4 SE1/4, SW1/4 NE1/4, NE1/4 SW1/4, and NW1/4 SW1/4 lying East of Spring River in Trust for the benefit of restricted Indians as above set forth.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Richard D. James', with a long horizontal flourish extending to the right.

RICHARD D. JAMES,

OBA No. 4617

FOR THE FIRM



Parcel E
Unrestricted Private
Abstract No. 12423
Ref: Exhibit G-30

coincident with
parcel line





5-T27N-R23E

4-T27N-R23E

0 0.005 0.01 0.02 Miles

Date: 12/16/2022

Parcel E - Federal Lands (BIA)

-  Anticipated Project Boundary
-  GRDA Owned Land
-  Parcel E
-  Section Line

Federal Lands within the Project Boundary: 0 Acres

GRDA owns all the property within the Anticipated Project Boundary for Parcel E.

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COY DEAN MORROW
DENNIS J. WATSON
*RICHARD D. JAMES

Of Counsel
**HON. ROBERT E. REAVIS II
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*Oklahoma & Missouri
**Oklahoma & Kansas

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JAY, OK 74346
TEL. 918-253-6208 FAX 918-253-6209

September 4, 2019

Ms. Tamara Jahnke, Esq.
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Ottawa County Abstract and Title Company Abstract No. 12423
Covering: Lot 10 in the SW ¼ of Section 4, Township 27 North,
Range 23 East of the Indian Meridian, Ottawa County, Oklahoma;
Our File No. 21463

Dear Ms. Jahnke:

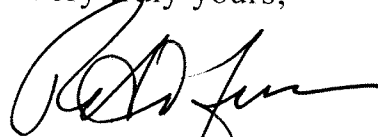
We have completed examination of the above referenced abstract of title, consisting of 212 pages. This parcel was conveyed by Allotment Deed to multiple Cherokee Freedmen, and was originally unrestricted. Subsequently, title was held in trust by the USA for the benefit of a restricted Quapaw grantee, but was thereafter conveyed free from restrictions by a Deed approved by the BIA, and shown at page 100 of the abstract, and recorded in Book 612 at Page 595. Title is presently held by Jacqueline Dawn Lipps and Jeromy John Lipps, by virtue of a Warranty Deed shown at page 176 of the abstract and recorded in Book 1007 at Page 449, less that portion to which the Grand River Dam Authority acquired fee simple title by condemnation. This is the portion of the property lying below the approximate 750 foot meander line which is described by metes and bounds in the Journal Entry shown at page 74 of the abstract and recorded in Book 169 at Page 331. Outstanding Mortgages covering the portion of the property owned by Mr. and Mrs. Lipps are shown at pages 186, 198, 205 and 207 of the abstract.

Flowage easements over the subject premises appear at pages 81 and 82 of the abstract and are recorded in Book 189 at Page 554, and Book 206 at Page 243. These easements were acquired by condemnation by the United States of America in 1945 and 1947 and grant a perpetual easement to “inundate, submerge, and flow” over all of the subject premises, lying below elevation 756.1 sea level datum, and to “inundate, submerge and flow intermittently, during Flood Periods,” that portion of the premises lying between 756.1 and 760 sea level datum.

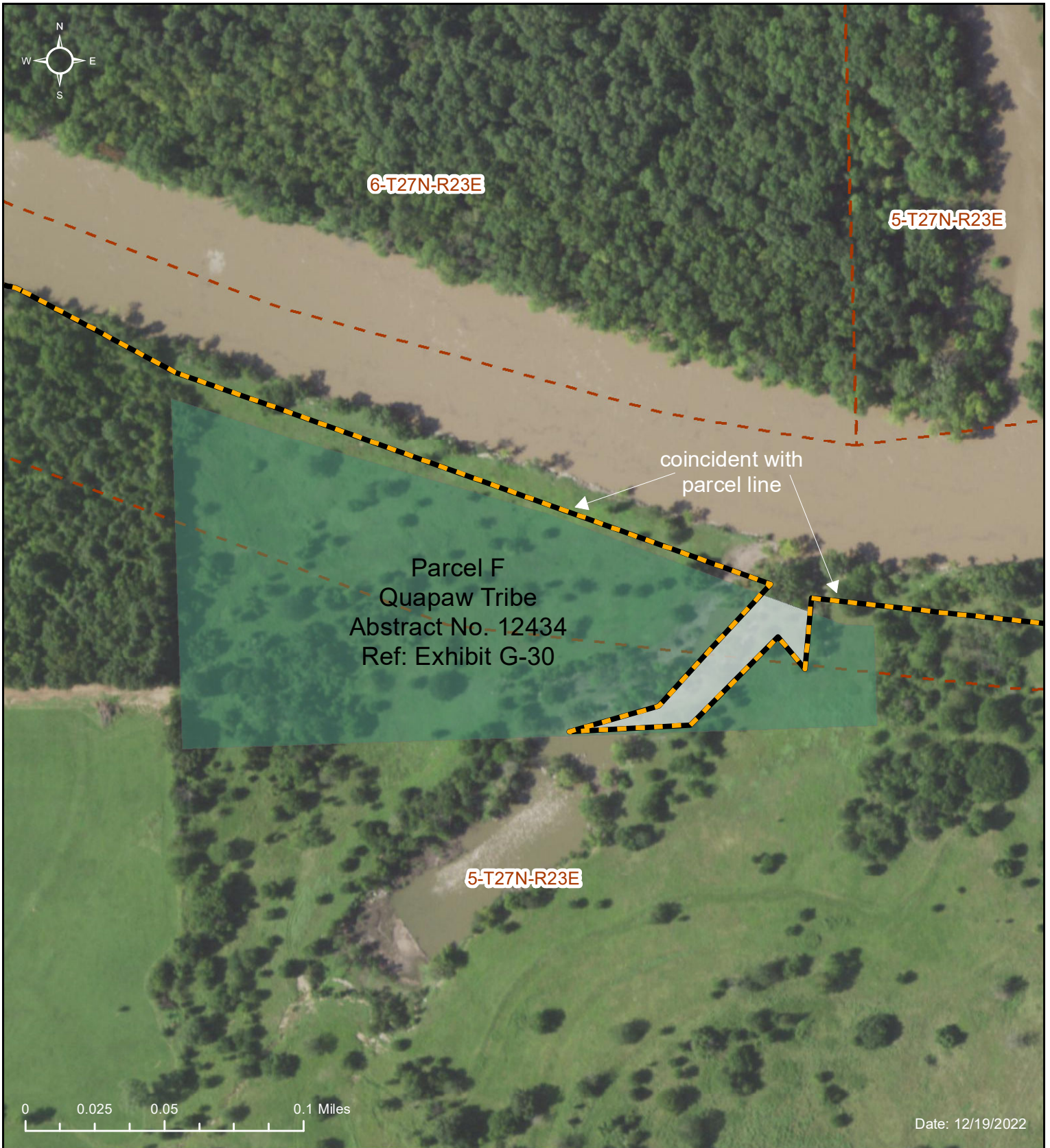
The property is subject to the provisions of the Ottawa County Floodplain Regulation of 2006 shown at page 150 of the abstract and recorded in Book 819 at Page 160, and the Amendment thereto shown at page 155 of the abstract and recorded in Book 839 at Page 1.

Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has valid and subsisting flowage easements over all of the property lying below elevation 760 sea level datum, by virtue of the easements acquired by condemnation, and owns in fee simple that portion which lies below elevation 750 sea level datum.





Very truly yours,

A handwritten signature in black ink, appearing to read "Richard D. James", written over a circular stamp or mark.

RICHARD D. JAMES,
OBA No. 4617
FOR THE FIRM



Parcel F - Federal Lands (BIA)

-  Anticipated Project Boundary
-  GRDA Owned Land
-  Parcel F
-  Section Line

Federal Lands within the Project Boundary: 0 Acres

GRDA owns all the property within the Anticipated Project Boundary for Parcel F.

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**Oklahoma & Kansas

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February 3, 2020

Ms. Tamara Jahnke, Esquire
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Ottawa County Abstract and Title Company Abstract No. 12434
Covering: Lots 7 and 8; and NW1/4 SE1/4; and E1/2 SE1/4 in Section 5,
Township 27 North, Range 23 East of the Indian Meridian, Ottawa County,
Oklahoma.
Our File No. 21463

Dear Ms. Jahnke:

We have completed examination of the above referenced abstract of title, consisting of 384 pages, and last certified as of January 29, 2020 at 7:55 a.m. All of the property was originally conveyed by allotment and homestead deeds to Amanda Drew, Mont Smith, Melinda Smith and Issac Drew, Cherokee allottees, none of whom were of sufficient quantity of Indian blood so as to make the allotments restricted against alienation. Title to that portion of the property lying below elev 750 sea level datum was acquired in fee simple by condemnation by GRDA in 1941 by Judgment shown at page 91 of the abstract and recorded in Book 169 at Page 331. The Judgment shown at page 98 of the abstract and recorded in Book 181 at Page 206 grants the USA a flowage easement on all of the property lying below 756.1 sea level datum and an Intermittent Flowage Easement during flood conditions over all of the property lying between elev 756.1 and 760, sea level datum.

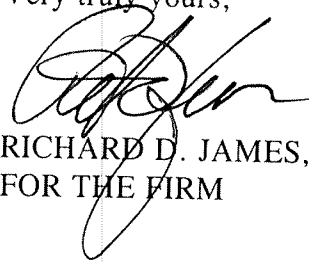
Title to all of the property lying East of the Will Rogers Turnpike remains unrestricted and vested in Jacqueline Dawn Lipps and Jeromy John Lipps pursuant to a Warranty Deed shown at page 336 of the abstract and recorded in Book 1007 at Page 449. A small tract on the South boundary bordering State Highway 125 was conveyed to

Lance Mauer by Warranty Deed shown at page 215 of the abstract and recorded in Book 745 at Page 97.

That portion of the property lying West of the Will Rogers Turnpike is held in Trust by the United States of America pursuant to a Deed to Restricted Indian Land shown at page 126 of the abstract and recorded in Book 302 at Page 765, for the benefit of Jean Ann Quapaw, now Blue, now deceased.

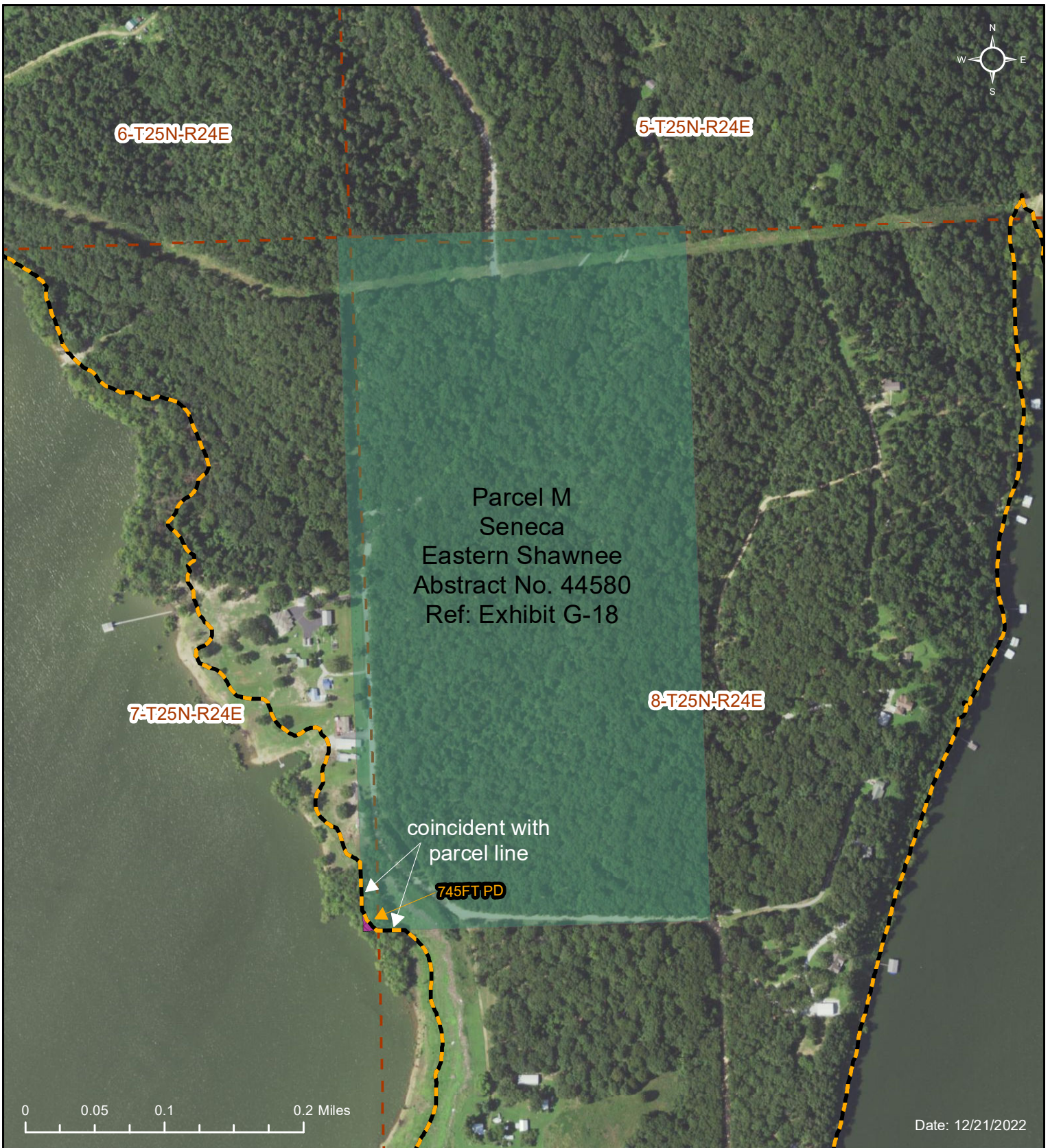
Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of the property lying below elev 756.1 sea level datum, and an Intermittent Flowage Easement during flood conditions over that portion of the property lying between elev 756.1 and 760 sea level datum, by virtue of the easements acquired by condemnation, and owns in fee simple that portion which lies below elev 750 sea level datum.

Very truly yours,








RICHARD D. JAMES, OBA No. 4617
FOR THE FIRM

RDJ/cb
Enc.



Parcel M - Federal Lands (BIA)

-  Anticipated Project Boundary (745FT PD)
-  Federal Land in Anticipated Project Boundary
-  Flowage Easement on Federal Lands
-  Parcel M
-  Section Line

Federal Lands within the Project Boundary: ≈ 0.04 Acres

GRDA holds a flowage easement for all federal lands within the Anticipated Project Boundary for Parcel M.

The federal acreage is calculated based on GIS data from Bureau of Indian Affairs (BIA) tracts provided to GRDA.

GRDA used the BIA data as it was provided without adjustment for difference in coordinate system, projection, or digitizing inaccuracies. The unadjusted BIA data can lead to inaccurate land acreages. GRDA will work with the BIA to address the discrepancy for the FLA.

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COY DEAN MORROW
DENNIS J. WATSON
*RICHARD D. JAMES

Of Counsel
**HON. ROBERT E. REAVIS II
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September 17, 2019

Ms. Tamara Jahnke, Esq.
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Grand River Abstract and Title Company Abstract No. 44580
Covering: The W $\frac{1}{2}$ NW $\frac{1}{4}$ of Section 8, Township 25 North, Range
24 East of the Indian Meridian, Delaware County, Oklahoma, LESS
GRDA and subject to any and all easements.
Our File No. 21463

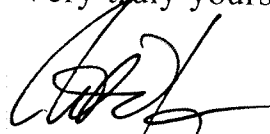
Dear Ms. Jahnke:

We have completed examination of the above referenced abstract of title, consisting of 129 pages, and last certified as of 9/13/19 at 7:55 A.M. This parcel was conveyed by Trust Patent to Alexander Nichols Junior, Seneca Cayuga allottee. Pursuant to Probate Order shown at page 113 of the abstract and recorded in Book 254 at Page 596, title remains vested in the United States of America, in Trust for the benefit of James Franklin Higbee ($\frac{1}{4}$), Dixie Whitetree ($\frac{1}{4}$) and Nettie Nichols Rackleff ($\frac{1}{2}$).

A flowage easement over the subject premises appears at page 21 of the abstract and is recorded in Book 157 at Page 102. This easement was acquired by condemnation by the United States of America in 1944 and grants a perpetual easement to "inundate, submerge, and flow" over all of the subject premises, lying below elevation 758 sea level datum, and subsequently assigned to the GRDA by an Assignment shown at page 74 of the abstract and recorded in Book 170 at Page 194.

Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of the property lying below elevation 758 sea level datum, by virtue of the easement acquired by condemnation.





Very truly yours,

A handwritten signature in black ink, appearing to read 'R. D. James', written over the typed name.

RICHARD D. JAMES,
OBA No. 4617
FOR THE FIRM



Parcel N - Federal Lands (BIA)

-  Anticipated Project Boundary
-  GRDA Owned Land
-  Parcel N
-  Section Line

Federal Lands within the Project Boundary: 0 Acres

GRDA owns all the property within the Anticipated Project Boundary for Parcel N.

COY DEAN MORROW
DENNIS J. WATSON
*RICHARD D. JAMES

Of Counsel
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October 11, 2019

Ms. Tamara Jahnke, Esq.
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Grand River Abstract and Title Company Abstract No. 44611
Covering: The W $\frac{1}{2}$ E $\frac{1}{2}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 11, Township 25
North, Range 24 East of the Indian Meridian, Delaware County,
Oklahoma, subject to any and all easements.
Our File No. 21463

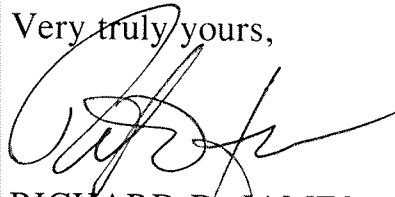
Dear Ms. Jahnke:

We have completed examination of the above referenced abstract of title, consisting of 372 pages, and last certified as of 9/25/19 at 7:55 A.M. This parcel was conveyed by Trust Patent to Seneca Cayuga allottee, John Sandstone, by an instrument shown at page 4 of the abstract. Title remained restricted and in Trust for the benefit of multiple generations of the descendants of the allottee until conveyed by BIA approved Warranty Deeds shown at pages 95, 97 and 89 of the abstract to Todd William England and Pamela Sue England, the current record owner. These instruments are recorded in Book 1382 at Pages 23 and 25, and Book 237 at Page 169 cover the subject premises less the portion to which the Grand River Dam Authority acquired fee simple title by BIA approved Deed to the Inherited Lands. This is the portion of the property lying below the 750 foot meander line, described by metes and bounds in the Indian Deed to Inherited Lands shown at page 14 of the abstract and recorded in Book 14 at Page 32.

A flowage easement over the subject premises appears at page 16 of the abstract and is recorded in Book 157 at Page 149. This easement was acquired by condemnation by the United States of America in 1944 and grants a perpetual easement to "inundate, submerge, and flow" over all of the subject premises, lying below elevation 758 sea level datum.

Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of the property lying below elevation 758 sea level datum, by virtue of the easement acquired by condemnation, and owns in fee simple that portion which lies below elevation 750 sea level datum.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Richard D. James', written over the typed name below.

RICHARD D. JAMES,
OBA No. 4617
FOR THE FIRM



Parcel O
Seneca-Cayuga Nation
Abstract No. 44613
and 44616
Ref: Exhibit G-19

10-T25N-R24E





11-T25N-R24E

coincident with
parcel line

0 0.025 0.05 0.1 Miles

Date: 12/16/2022

Parcel O - Federal Lands (BIA)

-  Anticipated Project Boundary
-  GRDA Owned Land
-  Parcel O
-  Section Line

Federal Lands within the Project Boundary: 0 Acres

GRDA owns all the property within the Anticipated Project Boundary for Parcel O.

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October 10, 2019

Ms. Tamara Jahnke, Esq.
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Grand River Abstract and Title Company Abstract No. 44613
Covering: The E $\frac{1}{2}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 11, Township 25
North, Range 24 East of the Indian Meridian, Delaware County,
Oklahoma, subject to any and all easements.
Our File No. 21463

Dear Ms. Jahnke:

We have completed examination of the above referenced abstract of title, consisting of 94 pages, and last certified as of 9/27/19 at 7:55 A.M. This parcel was conveyed by Trust Patent to Seneca Cayuga allottee, Malinda Dick, by an instrument shown at page 4 of the abstract. Title remained restricted and in Trust for the benefit of multiple generations of the descendants of the allottee until conveyed by BIA approved Warranty Deeds shown at pages 80, 83, 86 and 89 of the abstract to the Seneca Cayuga Tribe of Oklahoma, the current record owner. These instruments are recorded in Book 1930 at Pages 126, 129, 132 and 135, and cover the subject premises less the portion to which the Grand River Dam Authority acquired fee simple title by condemnation. This is the portion of the property lying below the 750 foot meander line, described by metes and bounds in the Journal Entry of Judgment shown at page 14 of the abstract and recorded in Book 143 at Page 541.

A flowage easement over the subject premises appears at page 19 of the abstract and is recorded in Book 157 at Page 149. This easement was acquired by condemnation by the United States of America in 1944 and grants a perpetual easement to "inundate, submerge, and flow" over all of the subject premises, lying below elevation 758 sea level datum.

Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of the property lying below elevation 758 sea level datum, by virtue of the easement acquired by condemnation, and owns in fee simple that portion which lies below elevation 750 sea level datum.

Very truly yours,



RICHARD D. JAMES,
OBA No. 4617
FOR THE FIRM



Parcel P
Seneca-Cayuga Nation
Abstract No. 44497
Ref: Exhibit G-19





11-T25N-R24E

coincident with
parcel line

0 0.0075 0.015 0.03 Miles

Date: 12/14/2022

Parcel P - Federal Lands (BIA)

-  Anticipated Project Boundary
-  GRDA Owned Land
-  Parcel P
-  Section Line

Federal Lands within the Project Boundary: 0 Acres

GRDA owns all the property within the Anticipated Project Boundary for Parcel P.

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September 17, 2019

Ms. Tamara Jahnke, Esq.
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Grand River Abstract and Title Company Abstract No. 44497
Covering: The W $\frac{1}{2}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 11, Township 25
North, Range 24 East of the Indian Meridian, Delaware County,
Oklahoma, subject to any and all easements.
Our File No. 21463

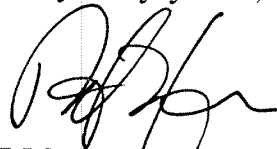
Dear Ms. Jahnke:

We have completed examination of the above referenced abstract of title, consisting of 78 pages, and last certified as of 7/25/19 at 7:55 A.M. This parcel was conveyed by Trust Patent to Seneca Cayuga allottee, Malinda Dick, by an instrument shown at page 6 of the abstract. Title remained restricted and in Trust for the benefit of multiple generations of the descendants of the allottee until conveyed by BIA approved Warranty Deeds shown at pages 67, 70, and 73 of the abstract to the Seneca Cayuga Tribe of Oklahoma, the current record owner. These instruments are recorded in Book 193 at Pages 129, 132 and 135, and cover the subject premises less the portion to which the Grand River Dam Authority acquired fee simple title by condemnation. This is the portion of the property lying below the 750 foot meander line, described by metes and bounds in the Journal Entry of Judgement shown at page 14 of the abstract and recorded in Book 143 at Page 541. It is also described in the above referenced deeds to the current record owner as being the South 112.2 feet of the property.

A flowage easement over the subject premises appears at page 19 of the abstract and is recorded in Book 157 at Page 149. This easement was acquired by condemnation by the United States of America in 1944 and grants a perpetual easement to "inundate, submerge, and flow" over all of the subject premises, lying below elevation 758 sea level datum.

Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of the property lying below elevation 758 sea level datum, by virtue of the easement acquired by condemnation, and owns in fee simple that portion which lies below elevation 750 sea level datum.





Very truly yours,

A handwritten signature in black ink, appearing to read "Richard D. James", written in a cursive style.

RICHARD D. JAMES,
OBA No. 4617
FOR THE FIRM



Parcel Q - Federal Lands (BIA)

-  Anticipated Project Boundary
-  GRDA Owned Land
-  Parcel Q
-  Section Line

Federal Lands within the Project Boundary: 0 Acres

GRDA owns all the property within the Anticipated Project Boundary for Parcel Q.

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DENNIS J. WATSON
*RICHARD D. JAMES

Of Counsel
**HON. ROBERT E. REAVIS II
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*Oklahoma & Missouri
**Oklahoma & Kansas

August 1, 2019

Ms. Tamara Jahnke, Esq.
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Grand River Abstract and Title Company Abstract No. 44503
Covering: The SE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 12, Township 25 North,
Range 24 East of the Indian Meridian, Delaware County, Oklahoma;
Our File No. 21463

Dear Ms. Jahnke:

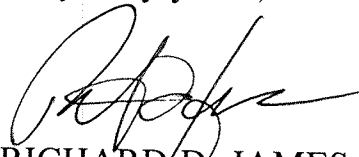
We have completed examination of the above referenced abstract of title, consisting of 45 pages. This parcel was never conveyed by Allotment Deed, Patent or Trust Patent, and title thus remains held in Trust by the United States of America for the benefit of the Seneca Cayuga Tribe of Oklahoma, less that portion to which the Grand River Dam Authority acquired fee simple title by condemnation. This is the portion of the property lying below the 750 foot meander line which is described by metes and bounds in the Journal Entry shown at page 5 of the abstract and recorded in Book 144 at Page 245.

A flowage easement over the subject premises appears at page 9 of the abstract and is recorded in Book 157 at Page 149. This easement was acquired by condemnation by the United States of America in 1944 and

grants a perpetual easement to “inundate, submerge, and flow” over all of the subject premises, lying below elevation 758 sea level datum.

Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of the property lying below elevation 758 sea level datum, by virtue of the easement acquired by condemnation, and owns in fee simple that portion which lies below elevation 750 sea level datum.





Very truly yours,

A handwritten signature in black ink, appearing to read 'Richard D. James', written over the typed name below.

RICHARD D. JAMES,
OBA No. 4617
FOR THE FIRM



Parcel R - Federal Lands (BIA)

-  Anticipated Project Boundary
-  GRDA Owned Land
-  Parcel R
-  Section Line

Federal Lands within the Project Boundary: 0 Acres

GRDA owns all the property within the Anticipated Project Boundary for Parcel R.

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August 1, 2019

Ms. Tamara Jahnke, Esq.
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Grand River Abstract and Title Company Abstract No. 44502
Covering: The NE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 12, Township 25 North,
Range 24 East of the Indian Meridian, Delaware County, Oklahoma;
Our File No. 21463

Dear Ms. Jahnke:

We have completed examination of the above referenced abstract of title, consisting of 45 pages. This parcel was never conveyed by Allotment Deed, Patent or Trust Patent, and title thus remains held in Trust by the United States of America for the benefit of the Seneca Cayuga Tribe of Oklahoma, less that portion to which the Grand River Dam Authority acquired fee simple title by condemnation. This is the portion of the property lying below the 750 foot meander line which is described by metes and bounds in the Journal Entry shown at page 5 of the abstract and recorded in Book 144 at Page 245.

A flowage easement over the subject premises appears at page 9 of the abstract and is recorded in Book 157 at Page 149. This easement was acquired by condemnation by the United States of America in 1944 and grants a perpetual easement to "inundate, submerge, and flow" over all of the subject premises, lying below elevation 758 sea level datum.

Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of the property lying below elevation 758 sea level datum, by virtue of the easement acquired by condemnation, and owns in fee simple that portion which lies below elevation 750 sea level datum.

Very truly yours,

A handwritten signature in black ink, appearing to read "Richard D. James", written over the typed name below.

RICHARD D. JAMES,
OBA No. 4617
FOR THE FIRM






Parcel T
Seneca-Cayuga Nation
Abstract No. 12433
Ref: Exhibit G-24

19-T26N-R24E

0 0.005 0.01 0.02 Miles

Date: 12/15/2022

Parcel T - Federal Lands (BIA)

-  Anticipated Project Boundary
-  Parcel T
-  Section Line

Federal Lands within the Project Boundary: 0 Acres

LAW OFFICE OF
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COY DEAN MORROW
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*RICHARD D. JAMES

Of Counsel
**HON. ROBERT E. REAVIS II
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*Oklahoma & Missouri
**Oklahoma & Kansas

November 8, 2019

Ms. Tamara Jahnke, Esq.
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Ottawa County Abstract and Title Company Abstract No. 12433
Covering: The SW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 19, Township 26 North,
Range 24 East of the Indian Meridian, Ottawa County, Oklahoma.
Our File No. 21463

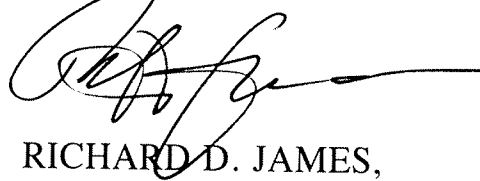
Dear Ms. Jahnke:

We have completed examination of the above referenced abstract of title, consisting of 87 pages, and last certified as of 11/6/19 at 7:55 A.M. This parcel was conveyed by Trust Patent to Seneca Cayuga allottee, Susannah Young, by an instrument shown at page 7 of the abstract. Title remains restricted and in Trust for the benefit of multiple generations of the descendants of the allottee, pursuant to the BIA Probate Order shown at page 40 of the abstract. This Order distributes the property to Phillip Steven Gourd, Mark Anthony Gourd, and John Louis Gourd, Seneca-Cherokee unallotees and the current record owners, subject to a life estate in favor of their non-Indian mother, Ellen Mae Hagan Gourd. This instrument is recorded in Book 347 at Page 477 and covers the subject premises less the portion to which the Grand River Dam Authority acquired fee simple title by BIA approved Warranty Deed shown at page 8 of the abstract and recorded in Book 163 at page 582. This is the portion of the property lying below the 750 foot meander line, described by metes and bounds in the said deed.

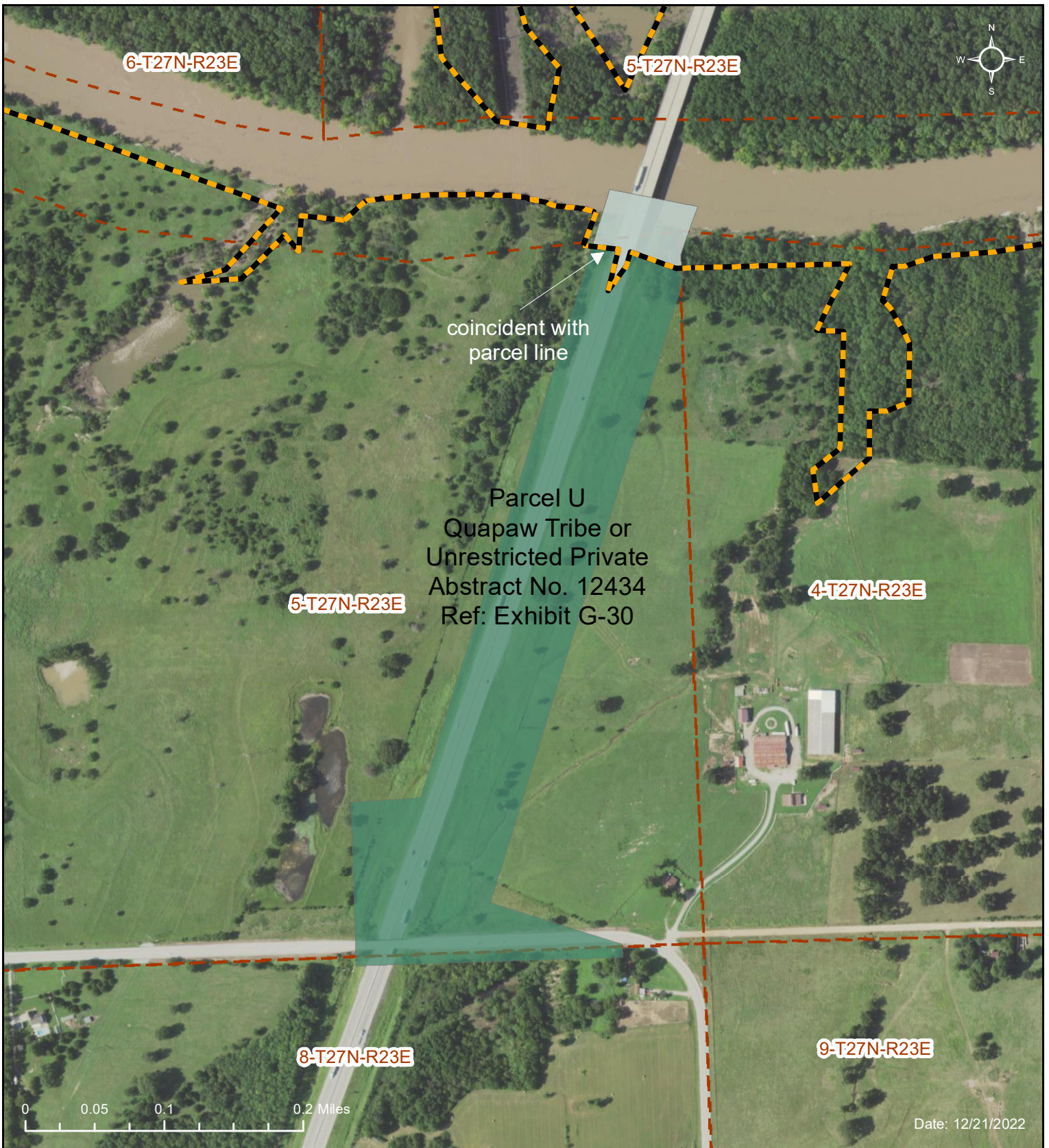
A flowage easement over the subject premises appears at page 10 of the abstract and is recorded in Book 179 at Page 981. This easement was acquired by condemnation by the United States of America in 1944 and grants a perpetual easement to "inundate, submerge, and flow" over all of the subject premises, lying below elevation 758 sea level datum.

Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of the property lying below elevation 758 sea level datum, by virtue of the easement acquired by condemnation, and owns in fee simple that portion which lies below elevation 750 sea level datum.





Very truly yours,

A handwritten signature in black ink, appearing to read "R. D. James", with a long horizontal flourish extending to the right.

RICHARD D. JAMES,
OBA No. 4617
FOR THE FIRM



Parcel U - Federal Lands (BIA)

-  Anticipated Project Boundary
-  GRDA Owned Land
-  Parcel U
-  Section Line

Federal Lands within the Project Boundary: 0 Acres

GRDA owns all the property within the Anticipated Project Boundary for Parcel U.

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*RICHARD D. JAMES

Of Counsel
**HON. ROBERT E. REAVIS II
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February 3, 2020

Ms. Tamara Jahnke, Esquire
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Ottawa County Abstract and Title Company Abstract No. 12434
Covering: Lots 7 and 8; and NW1/4 SE1/4; and E1/2 SE1/4 in Section 5,
Township 27 North, Range 23 East of the Indian Meridian, Ottawa County,
Oklahoma.
Our File No. 21463

Dear Ms. Jahnke:

We have completed examination of the above referenced abstract of title, consisting of 384 pages, and last certified as of January 29, 2020 at 7:55 a.m. All of the property was originally conveyed by allotment and homestead deeds to Amanda Drew, Mont Smith, Melinda Smith and Issac Drew, Cherokee allottees, none of whom were of sufficient quantity of Indian blood so as to make the allotments restricted against alienation. Title to that portion of the property lying below elev 750 sea level datum was acquired in fee simple by condemnation by GRDA in 1941 by Judgment shown at page 91 of the abstract and recorded in Book 169 at Page 331. The Judgment shown at page 98 of the abstract and recorded in Book 181 at Page 206 grants the USA a flowage easement on all of the property lying below 756.1 sea level datum and an Intermittent Flowage Easement during flood conditions over all of the property lying between elev 756.1 and 760, sea level datum.

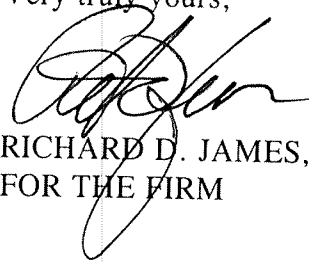
Title to all of the property lying East of the Will Rogers Turnpike remains unrestricted and vested in Jacqueline Dawn Lipps and Jeromy John Lipps pursuant to a Warranty Deed shown at page 336 of the abstract and recorded in Book 1007 at Page 449. A small tract on the South boundary bordering State Highway 125 was conveyed to

Lance Mauer by Warranty Deed shown at page 215 of the abstract and recorded in Book 745 at Page 97.

That portion of the property lying West of the Will Rogers Turnpike is held in Trust by the United States of America pursuant to a Deed to Restricted Indian Land shown at page 126 of the abstract and recorded in Book 302 at Page 765, for the benefit of Jean Ann Quapaw, now Blue, now deceased.

Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of the property lying below elev 756.1 sea level datum, and an Intermittent Flowage Easement during flood conditions over that portion of the property lying between elev 756.1 and 760 sea level datum, by virtue of the easements acquired by condemnation, and owns in fee simple that portion which lies below elev 750 sea level datum.

Very truly yours,

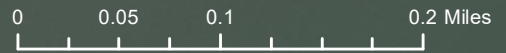


RICHARD D. JAMES, OBA No. 4617
FOR THE FIRM






RDJ/cb
Enc.



Date: 12/21/2022



Parcel V - Federal Lands (BIA)

-  Anticipated Project Boundary
-  Federal Lands in Anticipated Project Boundary
-  Flowage Easement on Federal Lands
-  Parcel V
-  Section Line

Federal Lands within the Project Boundary: ≈ 0.12 Acres

GRDA holds a flowage easement for all federal lands within the Anticipated Project Boundary for Parcel V.

The federal acreage is calculated based on GIS data from Bureau of Indian Affairs (BIA) tracts provided to GRDA.

GRDA used the BIA data as it was provided without adjustment for difference in coordinate system, projection, or digitizing inaccuracies. The unadjusted BIA data can lead to inaccurate land acreages. GRDA will work with the BIA to address the discrepancy for the FLA.

COY DEAN MORROW
DENNIS J. WATSON
*RICHARD D. JAMES

Of Counsel
** HON. ROBERT E. REAVIS II
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October 11, 2019

Ms. Tamara Jahnke, Esq.
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Grand River Abstract and Title Company Abstract No. 44601
Covering: The W $\frac{1}{2}$ SE $\frac{1}{4}$ of Section 10, Township 25 North, Range
24 East of the Indian Meridian, Delaware County, Oklahoma,
subject to any and all easements.
Our File No. 21463

Dear Ms. Jahnke:

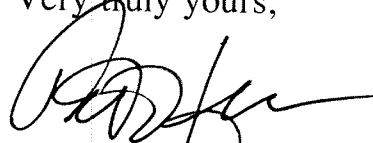
We have completed examination of the above referenced abstract of title, consisting of 208 pages, and last certified as of 9/20/19 at 7:55 A.M. This parcel was conveyed by Unrestricted Patent to Mitchell Spicer, purchaser of lands within the allotment of Seneca Cayuga allottee Kate Bee, by an instrument shown at page 4 of the abstract. Title remained unrestricted until the same was conveyed in 2011 in Trust to the United States of America, the current record owner, for the benefit of the Seneca Cayuga Tribe of Oklahoma BIA approved Warranty Deed shown at page 206, of the abstract and recorded in Book 1967 at Page 198.

A flowage easement over the subject premises appears at page 71 of the abstract and is recorded in Book 157 at Page 149. This easement was acquired by condemnation by the United States of America in 1944 and grants a perpetual easement to "inundate, submerge, and flow" over all of the subject premises, lying below elevation 758 sea level datum. An Assignment of the same from the United States of America to the Grand

River Dam Authority appears at page 96 of the abstract and is recorded in Book 170 at Page 194.

Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of the property lying below elevation 758 sea level datum, by virtue of the easement acquired by condemnation.




Very truly yours,

A handwritten signature in black ink, appearing to read 'Richard D. James', written over the typed name below.

RICHARD D. JAMES,
OBA No. 4617
FOR THE FIRM



Parcel W - Federal Lands (BIA)

-  Anticipated Project Boundary
-  Parcel W
-  Section Line

Federal Lands within the Project Boundary: 0 Acres

LAW OFFICE OF
MORROW, WATSON, & JAMES
A PROFESSIONAL CORPORATION
21 SOUTH MAIN P.O. BOX 1168
MIAMI, OKLAHOMA 74355
TEL. 918-542-5501 FAX. 918-542-5400

COY DEAN MORROW
DENNIS J. WATSON
*RICHARD D. JAMES

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**HON. ROBERT E. REAVIS II
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*Oklahoma & Missouri
**Oklahoma & Kansas

Jay Office:
510 KRAUSE STREET
JAY, OK 74346
TEL. 918-253-6208 FAX 918-253-6209

October 11, 2019

Ms. Tamara Jahnke, Esq.
Assistant General Counsel, Grand River Dam Authority
P.O. Box 409
Vinita, OK 74350

Re: Grand River Abstract and Title Company Abstract No. 44607
Covering: The NW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 17, Township 25 North,
Range 24 East of the Indian Meridian, Delaware County, Oklahoma,
subject to any and all easements.
Our File No. 21463

Dear Ms. Jahnke:

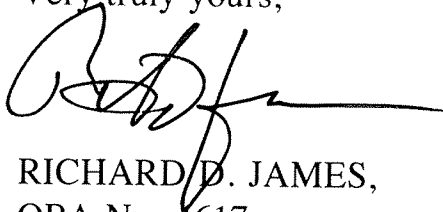
We have completed examination of the above referenced abstract of title, consisting of 219 pages, and last certified as of 9/23/19 at 7:55 A.M. This parcel was conveyed by Trust Patent to Seneca Cayuga allottee, Mary J. Kariho, by an instrument shown at page 4 of the abstract. Title remains restricted and in Trust for the benefit of the allottee and her immediate and remote grantees of the two separate one acre tracts conveyed by BIA approved Warranty Deeds shown at pages 204 and 208 of the abstract to James Logan and Raylene Faye Birkes Hackler, the current record owners. These instruments are recorded in Book 336 at Pages 213, and Book 1157 at Page 144, and cover the above referenced one acre tracts. An additional one acre tract was conveyed by the allottee, free of restrictions by BIA approved Warranty Deed shown at page 68 of the abstract and recorded in Book 306 at Page 239. Title to this tract is now vested in Sabrina A. Neal, free from restrictions by virtue of the Warranty Deed shown at page 169 of the abstract, and recorded in Book 1585 at Page 53. The portion of the

property lying below the 750 foot meander line, described by metes and bounds in the BIA approved Restricted Indian Deed shown at page 7 of the abstract and recorded in Book 131 at Page 540, was acquired in fee simple by the GRDA in 1939.

A flowage easement over the subject premises appears at page 9 of the abstract and is recorded in Book 157 at Page 102. This easement was acquired by condemnation by the United States of America in 1944 and grants a perpetual easement to "inundate, submerge, and flow" over all of the subject premises, lying below elevation 758 sea level datum.

Accordingly, it is the opinion of the undersigned that Grand River Dam Authority has a valid and subsisting flowage easement over all of the property lying below elevation 758 sea level datum, by virtue of the easement acquired by condemnation, and owns in fee simple that portion which lies below elevation 750 sea level datum.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Richard D. James', with a long horizontal flourish extending to the right.

RICHARD D. JAMES,
OBA No. 4617
FOR THE FIRM

From: [Jahnke, Tamara](#)
To: [Cleary, Conor P](#); [Ross, Allison N](#)
Cc: [Edwards, Brian](#); [Townsend, Darrell](#); [Roper, Aaron](#); [Barrow, Joel](#); [Giebel, Valery O](#)
Subject: RE: EXTERNAL: Re: [EXTERNAL] Federal lands within the Pensacola Project Boundary
Date: Thursday, March 30, 2023 10:10:00 AM

The abstracts are not online. They are located at the GRDA Ecosystem & Education Center in Langley, Oklahoma. We will be glad to make them available from 8:00 o'clock a.m. to 4:30 p.m. Please send me a couple of dates and times so I can arrange for a conference room where you can review them.

From: Cleary, Conor P <conor.cleary@sol.doi.gov>
Sent: Thursday, March 30, 2023 9:47 AM
To: Ross, Allison N <Allison.Ross@bia.gov>; Jahnke, Tamara <Tamara.Jahnke@grda.com>
Cc: Edwards, Brian <Brian.Edwards@grda.com>; Townsend, Darrell <Darrell.Townsend@grda.com>; Roper, Aaron <Aaron.Roper@grda.com>; Barrow, Joel <Joel.Barrow@grda.com>; Giebel, Valery O <valery.giebel@sol.doi.gov>
Subject: EXTERNAL: Re: [EXTERNAL] Federal lands within the Pensacola Project Boundary

Ms. Jahnke,

Are the abstracts of title referenced in your letter of March 9, 2023, available electronically for review? If not, can we arrange a time and location to inspect said abstracts of title?

Thank you,

Conor Cleary

From: Ross, Allison N <Allison.Ross@bia.gov>
Sent: Friday, March 10, 2023 8:09 AM
To: Jahnke, Tamara <Tamara.Jahnke@grda.com>
Cc: Edwards, Brian <Brian.Edwards@grda.com>; Townsend, Darrell <Darrell.Townsend@grda.com>; Roper, Aaron <Aaron.Roper@grda.com>; Barrow, Joel <Joel.Barrow@grda.com>; Cleary, Conor P <conor.cleary@sol.doi.gov>; Giebel, Valery O <valery.giebel@sol.doi.gov>
Subject: Re: [EXTERNAL] Federal lands within the Pensacola Project Boundary

Ms. Jahnke,

Thank you for the information. BIA Eastern Oklahoma Region will review the attached document with Federal lands and get back to GRDA as soon as possible.

Thank you,
Allison Ross
Environmental Protection Specialist
BIA, Eastern Oklahoma Region