

In the United States Court of Federal Claims

No. 99-550 L

(into which has been consolidated No. 00-169 L)

(E-Filed: December 29, 2010)

THE OSAGE TRIBE OF INDIANS
OF OKLAHOMA,

Plaintiff,

v.

THE UNITED STATES OF AMERICA,

Defendant.

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) Indian Trust Claim; Application
) of Confederated Tribes of the
) Warm Springs Reservation v.
) United States to Claims for
) Damages for Breach of Trust
) Obligations
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Wilson K. Pipestem, Washington, DC, for plaintiff.¹ Merrill C. Godfrey, Washington, DC, and James P. Tuite, Washington, DC, of counsel.

Joseph H. Kim, with whom were Ignacia S. Moreno, Assistant Attorney General, Romney S. Philpott and Brian M. Collins, Environment & Natural Resources Division, U.S. Department of Justice, Washington, DC, for defendant.

OPINION

HEWITT, Chief Judge

I. Background

This Opinion resolves certain issues that were the focus of a June 30 and July 1, 2010 trial (trial), during which the court heard testimony from five witnesses² and

¹ An index to pages in this slip opinion keyed to the court's outline appears as Appendix A following this Opinion.

² For convenient reference, the court provides here the name and a description of each witness and, if applicable, a description of any filings related to the witness's testimony:

Mr. Gregory J. Chavarria was previously qualified by the court as defendant's "expert in accounting, particularly accounting related to tribal funds held in trust by the United States, including funds of the Osage Tribe." Osage Tribe of Indians of Okla. v. United States (Osage II), 72 Fed. Cl. 629, 635 n.8 (2006). Mr. Chavarria is a certified public accountant and has worked "in the areas of audit, management consulting and litigation consulting for approximately 24 years." Supplemental Expert Report of Gregory J. Chavarria (Chavarria Supplemental Report or Chavarria Supp. Rpt.), Docket Number (Dkt. No.) 526, at 1. Mr. Chavarria began working for Arthur Andersen as a staff auditor in 1985. 2006 Trial Transcript (2006 Tr.) 1804:19-21 (Mr. Chavarria); see id. at 1803:17 (stating that he began working at Arthur Andersen in 1985). He was promoted to senior auditor in 1987 and further promoted to manager in 1989. Id. at 1802:17-20. Throughout his time at Arthur Andersen, Mr. Chavarria was involved in various Bureau of Indian Affairs (BIA) engagements, including "reconciliation efforts regarding Tribal Trust Accounts." Osage II, 72 Fed. Cl. at 635 n.8 (internal quotation marks omitted). Mr. Chavarria is currently a partner at Clifton Gunderson, a national certified public accounting firm. Chavarria Supp. Rpt. 1.

The Declaration and Expert Report of Gregory J. Chavarria (Chavarria Report) was submitted to the court on June 24, 2009 as Exhibit H to Defendant's Response to Plaintiff's Amended Motion for Partial Summary Judgment (defendant's Response), Dkt. No. 420. The Chavarria Supplemental Report was submitted to the court on June 4, 2010. Both the Chavarria Report and the Chavarria Supplemental Report were admitted into evidence during the June 30 and July 1, 2010 trial. See Cumulative Index for Tr. of Proceedings [H]eld on June 30, 2010 and July 1, 2010 (Index), Dkt. No. 565, at 5, 7.

Mr. Robert Daigle has been involved in the oil and gas business since 1957. Revised and Corrected Transcript of Proceedings (Revised Transcript or Tr.), Dkt. Nos. 575, 577, at 487:23-24 (Mr. Daigle); see infra note 3 (explaining Revised Transcript). During the 1960s and 1970s, Mr. Daigle worked as an oil handler at Chevron, Tr. 489:8-18 (colloquy between Mr. Daigle and Mr. Philpott (def.'s counsel)), and then served as vice president at both an oil refinery and an oil gathering company, id. at 489:19-23. In 1979, Mr. Daigle became the chairman of the board and CEO of five TIPCO oil marketing and refining companies. Tr. 490:2-6, 17-20 (Mr. Daigle). Mr. Daigle "was responsible for those five companies to buy crude oil, refine it into petroleum products, and sell those products." Id. at 494:3-5. One of these companies, TIPCO Crude Oil Company (TIPCO), "was responsible for buying crude oil at the lease." Id. at 495:5-7. Through TIPCO, Mr. Daigle entered into numerous agreements with Koch Industries, Inc. (Koch) for the purchase and sale of crude oil from 1979 to 1983. Id. at 495:18-21. Mr. Daigle is currently principal owner and CEO of Louisiana Crude Oil Company. Id. at 490:8-11; Def.'s Proposed Witness List for Trial on Oil Royalty Under-Collection 1981-90, Dkt. No. 501, at 2.

In the parties' Joint Witness List (Jt. List), Dkt. No. 543, filed on June 24, 2010, plaintiff stated that Mr. Daigle "agreed only to an two-hour telephonic deposition the day before trial" and "has refused . . . to voluntarily produce, before his deposition, documents relevant to the

testimony he has proffered.” Jt. List 1; see also Tr. 16:12-18 (Mr. Godfrey ((pl.’s counsel)) (arguing that plaintiff is entitled to five hours of deposition testimony). Following trial, the court ordered Mr. Daigle to provide the parties and the court with a copy of his TIPCO employment agreement and also granted plaintiff an additional three hours to depose Mr. Daigle. Order of July 6, 2010, Dkt. No. 562, at 1-2. The court stated that plaintiff may use Mr. Daigle’s deposition testimony “in post-trial briefing for any purpose.” Id. at 2. Defendant filed Mr. Daigle’s employment agreement on July 13, 2010, Dkt. No. 563, Ex. A; plaintiff filed the transcript of Mr. Daigle’s deposition on July 30, 2010, Dkt. No. 568-1, Ex. A (Daigle Dep.).

Mr. Curtis Vance Klager has been an employee of Koch since 1980 and is “familiar with Koch’s crude oil accounting systems, including the pricing of crude oil and payments to interest holders for crude oil purchases made from their leases.” Osage Tribe of Indians of Okla. v. United States (Osage IV), 93 Fed. Cl. 1, 16 n.14 (2010). Mr. Klager initially worked in financial accounting at Koch and, in 1983, moved to a computer systems-related role. Tr. 42:24-43:10 (Mr. Klager). In the mid-1980s, Mr. Klager was promoted to accounting manager, and eventually to assistant comptroller, for lease purchase accounting. Id. at 43:22-25, 44:6-8. Koch’s lease purchase business entailed purchasing, gathering and transporting crude oil. Id. at 44:16-21. In his roles as accounting manager and assistant comptroller, Mr. Klager was responsible for using, manipulating and maintaining Koch’s computerized accounting data. Id. at 49:8-17, 50:5-15. Mr. Klager is currently a manager of fuels compliance for a subsidiary of Koch. Tr. 41:23-42:2 (colloquy between Mr. Klager and Mr. Godfrey (pl.’s counsel)).

Mr. Ronnie Martin was previously qualified by the court as defendant’s “expert in oil . . . , oil royalty calculation, the verification of oil royalty paid, and oil royalty practices.” Osage II, 72 Fed. Cl. at 635 n.8 (internal quotation marks omitted). Mr. Martin is currently senior managing director at FTI Consulting, Inc. (FTI). Id.; see also Supplemental Expert Report of Ronnie A. Martin (Martin Supplemental Report or Martin Supp. Rpt.), Dkt. No. 527, ¶ 3 (confirming that Mr. Martin has remained at FTI Consulting since Osage II). Prior to his employment at FTI, Mr. Martin worked for thirty-three years at Texaco, where he last served as vice president of Texaco Exploration Producing, Inc. (Texaco). Osage II, 72 Fed. Cl. at 635 n.8. At both FTI and Texaco, Mr. Martin’s duties “are and were to help clients analyze the claims relating to oil and gas issues, primarily valuation issues, particularly with respect to royalty and sometimes severance tax issues.” Id. (internal quotation marks omitted).

The Declaration and Expert Report of Ronnie A. Martin (Martin Rpt.) was submitted to the court on June 24, 2009 as Exhibit A to defendant’s Response. The Martin Supplemental Report was submitted to the court on June 11, 2010, Dkt. No. 527. Both reports, as well as several exhibits to the Martin Supplemental Report, were admitted into evidence during the June 30 and July 1, 2010 trial. See Index 5-6. The Affidavit of Ronnie A. Martin (Martin Affidavit or Martin Aff.) was submitted to the court on July 28, 2010 as Exhibit 3 to the parties’ Joint Motion to Amend Trial Record, Dkt. No. 566. The Martin Affidavit was admitted into evidence on July 29, 2010 by the court’s Order on Joint Motion to Amend Trial Record, Dkt. No. 567.

Mr. Daniel Reineke is a registered petroleum engineer and was previously qualified by the court as plaintiff’s expert on “oil royalty calculation and verification of royalty due.” Osage

admitted forty-three exhibits into evidence. See generally Cumulative Index for Tr. of Proceedings [H]eld on June 30, 2010 and July 1, 2010, Docket Number (Dkt. No.) 565.³

The trial was held to resolve factual disputes that the court identified during its consideration of plaintiff's motion for summary judgment on damages owed to plaintiff

II, 72 Fed. Cl. at 635 n.8 (internal quotation marks omitted). Mr. Reineke began working in the oil industry in 1975 as a drilling engineer for Conoco. Supplemental Expert Report of Daniel T. Reineke, P.E. (Reineke Supplemental Report or Reineke Supp. Rpt.), Ex. A, Dkt. No. 524, at 3. He subsequently worked as a district engineer at the Kansas-Nebraska Natural Gas Company and later as a division engineer for Samedan Oil Corporation. Id. Mr. Reineke left Samedan in 1979 to manage his own oil company and to work as an independent consulting engineer for other oil companies. Id.; Osage II, 72 Fed. Cl. at 635 n.8.

The Declaration and Expert Report of Daniel T. Reineke, P.E. (Reineke Report or Reineke Rpt.) was submitted to the court on May 1, 2009 to support plaintiff's Unopposed Motion to Amend its Motion for Summary Judgment, Dkt. No. 397, and later cross-referenced as Exhibit 2 to Plaintiff Osage Nation's Amended Motion for Summary Judgment on All Oil-Royalty Under-Collection Claims for July 1974 to December 2000 and All Deposit-Lag, Excessive-Cash-Balance, and Investment-Yield Claims for Accounts 7386 and 7886 for United States Fiscal Years 1973 to 1992, Dkt. No. 407. The August 7, 2009 Rebuttal Expert Report of Daniel T. Reineke, P.E. was submitted to the court as Exhibit 2 to Plaintiff Osage Nation's Reply Brief in Support of its Amended Motion for Summary Judgment on All Oil-Royalty Under-Collection Claims for July 1974 to December 2000 and All Deposit-Lag, Excessive-Cash-Balance, and Investment-Yield Claims for Accounts 7386 and 7886 for United States Fiscal Years 1973 to 1992, Dkt. No. 428. The Reineke Supplemental Report was submitted to the court on May 17, 2010, Dkt. Nos. 523 (providing substantive updates to Mr. Reineke's May 1, 2009 and August 7, 2009 reports) and 524 (providing updated summary of Mr. Reineke's qualifications), and the Rebut[t]al Expert Report of Daniel T. Reineke, P.E., Dkt. No. 547, was submitted to the court on June 26, 2010. The four reports, including Exhibits E and H to the Reineke Report, were admitted into evidence during the June 30 and July 1, 2010 trial. See Index 4; Tr. 303:7-8 (court) (admitting Reineke Report, PX 1613, into evidence). The Declaration of Daniel Reineke, P.E. (Reineke Declaration or Reineke Decl.) was submitted to the court on July 28, 2010 as Exhibit 2 to the parties' Joint Motion to Amend Trial Record. The Reineke Declaration was admitted into evidence on July 29, 2010. Order on Jt. Mot. to Amend Trial Rec.

³ The Index lists forty-two exhibits; however, the court also admitted the Reineke Report into evidence during testimony that appears only in the Revised Transcript. Tr. 303:7-8 (court). The Revised Transcript was prepared to include a portion of trial testimony of Mr. Reineke omitted in error from the transcript earlier prepared and provided to the parties and the court. The Revised Transcript includes approximately fifteen additional pages of testimony by Mr. Reineke. See Order of Aug. 26, 2010, Dkt. No. 578 (directing the parties to brief the court on the additional testimony contained in the Revised Transcript). All June 30 and July 1, 2010 trial transcript references in this Opinion are to the Revised Transcript.

(Osage Tribe or Osage Nation) stemming from defendant's breach of its fiduciary duty to collect, deposit and invest revenues generated from Osage oil leases.⁴ See Osage Tribe of Indians of Okla. v. United States (Osage IV), 93 Fed. Cl. 1, 20-21, 34 (2010) (finding that a trial on two issues was warranted); see also Order of June 21, 2010, Dkt. No. 539, at 2 (allowing defendant's expert to testify regarding a third unresolved issue). The court characterizes these issues as the Koch data issue, the gravity adjustment issue and the interest credit issue; each will be discussed in turn below. First, however, the court provides a brief overview of the history of this dispute,⁵ discussions of the court's findings in Osage Tribe of Indians of Okla. v. United States (Osage II), 72 Fed. Cl. 629 (2006), the court's initial trial on liability and damages, and Osage IV, which addressed plaintiff's 2009 motion for summary judgment, and a summary of the court's pre-trial rulings.

A. Overview

In Osage II, the court held that "the United States violated its duty as trustee of the Osage mineral estate by failing to collect all moneys due from Osage oil leases and to deposit and invest those moneys as required by statute and according to the fiduciary duty owed to the Osage Tribe." Osage II, 72 Fed. Cl. at 631, 671. The statute at issue, which was enacted into law in 1906, see Act of June 28, 1906, ch. 3572, 34 Stat. 539 (1906 Act), states that "leases for all oil, gas, and other minerals . . . may be made by the Osage [T]ribe of Indians through its tribal council, and with the approval of the Secretary of the Interior, and under such rules and regulations as he may prescribe." 34 Stat. at 543. The 1906 Act further provides "[t]hat all funds belonging to the Osage [T]ribe, and all moneys due, and all moneys that may become due, . . . shall be held in trust by the United States." 34 Stat. at 544. In Osage Tribe of Indians of Okla. v. United States (Osage I), 68 Fed. Cl. 322 (2005), the court found that the 1906 Act "establishes fiduciary duties that include both the proper management of Osage funds on deposit with the Treasury

⁴ "The Osage Nation and/or Tribe of Indians of Oklahoma" filed the original complaint in this case on August 2, 1999, which was assigned case no. 99-550 L by the Office of the Clerk of Court. In March and August of 2004, two amendments to that complaint were filed under the name "The Osage Tribe of Indians of Oklahoma." See Dkt. Nos. 52, 65. "The Osage Nation and/or Tribe of Indians of Oklahoma" brought a separate suit on March 31, 2000, which was assigned case no. 00-169 L by the Office of the Clerk of Court. The court consolidated the cases on September 14, 2005 and designated the earlier-filed action, case no. 99-550 L, as the lead case. See Order of Sept. 14, 2005, Dkt. No. 93, at 1.

⁵ Detailed discussions of the history of the dispute and the outcome of prior proceedings are contained in the court's prior opinions: Osage Tribe of Indians of Okla. v. United States, 57 Fed. Cl. 392 (2003); Osage Tribe of Indians of Okla. v. United States (Osage I), 68 Fed. Cl. 322 (2005); Osage II, 72 Fed. Cl. at 629; Osage Tribe of Indians of Okla. v. United States (Osage III), 75 Fed. Cl. 462 (2007); Osage IV, 93 Fed. Cl. at 1.

and the proper accounting of ‘all moneys due, and all moneys that may become due,’ in accordance with the terms of the oil and gas leases.” Osage I, 68 Fed. Cl. at 327 (internal citations omitted). The Osage Agency, which is housed in the Bureau of Indian Affairs (BIA) of the Department of the Interior, was responsible for managing the Osage oil leases. Osage II, 72 Fed. Cl. at 633. The regulations that guided the Osage Agency in its management of the leases (Osage Regulations) were established by the BIA and are unique to the Osage Reservation.⁶ Id.

To facilitate management of the large amount of historical accounting data related to the Osage Agency’s execution of its trust duties, the court and parties defined five exemplary “Tranche One trial months”--January 1976, May 1979, November 1980, February 1986 and July 1989--and four “Tranche One trial leases.”⁷ Osage II, 72 Fed. Cl. at 631 n.2; see Order of Feb. 22, 2006, Dkt. No. 176, at 2. “Both parties supported the use of the Tranche One months and leases as exemplary of the issues in dispute in the time periods represented.” Osage IV, 93 Fed. Cl. at 5 n.3; see also Osage Tribe of Indians of Okla. v. United States (Osage III), 75 Fed. Cl. 462, 474 (2007) (“The point of a trial on specific leases for specific months [was] to provide the parties an opportunity to focus on discovery and factual presentation in a manageable format.”).

After a trial on liability and damages for the exemplary Tranche One months and leases, the court held that the United States owed the Tribe damages for breach of its fiduciary duty as trustee and directed the parties to “jointly calculate and present to the court the amount of damages to which plaintiff is entitled.” Osage II, 72 Fed. Cl. at 671. The parties disagreed on some elements of the damages calculation in their Joint Submission on Calculation of Tranche One Damages, Dkt. No. 251, filed on November 16, 2006. On February 15, 2007 the court issued an opinion evaluating the parties’

⁶ “The Osage Reservation encompasses all of present-day Osage County, located in northern Oklahoma, and covers approximately 1.47 million acres.” Osage II, 72 Fed. Cl. at 633. The first oil and gas lease on the Osage Reservation was entered into in 1896, and the first well was drilled in 1897. Id.

⁷ Before the court established the exemplary trial months and leases, it divided the Tribe’s claims into two tranches. Order of Apr. 15, 2005, Dkt. No. 194 (filed in The Osage Nation and/or Tribe of Indians of Okla. v. United States, Case No. 00-169L, prior to case consolidation); Osage II, 72 Fed. Cl. at 631; see also Order of Mar. 16, 2005, Dkt. No. 181 (filed in Case No. 00-169L) (directing the parties to “file a joint proposal of amendments to the description of the first tranche of the case,” which “shall redefine the first tranche of the case to provide a set of issues on liability and damages to resolve a definable segment of the case”). Tranche One, which is at issue here, encompasses the Tribe’s trust fund mismanagement claims within the parameters established by the United States Court of Appeals for the Federal Circuit (Federal Circuit) in Shoshone Indian Tribe of the Wind River Reservation v. United States, 364 F.3d 1339, 1350-51 (Fed. Cir. 2004). Order of Apr. 15, 2005. Tranche Two covers all other claims. Id.

disagreements and directed the parties to file their damages calculations in accordance with its opinion. Osage III, 75 Fed. Cl. at 483. Upon the filing of the parties' second Joint Submission on Tranche One Damages, Dkt. No. 268, the court entered judgment for the Tribe in the amount of \$1,876,878.30.⁸ Judgment of Mar. 16, 2007, Dkt. No. 270. This amount consists of the damages owed to the Tribe with respect to the five Tranche One trial months for the four Tranche One trial leases. Osage IV, 93 Fed. Cl. at 6.

Fact discovery commenced on May 19, 2008 for all issues related to the application of the Tranche One trial damages calculation to the broader Tranche One time periods: (1) July 1974 through December 2000 for all oil-royalty under-collection claims, and (2) fiscal years 1973 to 1992 for all deposit-lag, excessive-cash-balance and investment-yield claims. Order of May 19, 2008, Dkt. No. 300. Discovery closed on November 18, 2008, Order of Aug. 21, 2008, Dkt. No. 319, and plaintiff filed a motion for summary judgment on February 23, 2009,⁹ see Pl. Osage Nation's Amended Mot. for Summ. J. on All Oil-Royalty Under-Collection Claims for July 1974 to December 2000 and All Deposit-Lag, Excessive-Cash-Balance, and Investment-Yield Claims for Accounts 7386 and 7886 for United States Fiscal Years 1973 to 1992 (plaintiff's Motion for Summary Judgment or Pl.'s Mot. Summ. J.), Dkt. No. 407, at 2.

In opposition to plaintiff's Motion for Summary Judgment, the government argued that summary judgment was inappropriate because a "determination of liability has [not] yet been found' beyond the Tranche One trial months and leases." Osage IV, 93 Fed. Cl. at 6 (quoting Def.'s Statement Regarding the Disc. Period Prior to Trial, Dkt. No. 497, at 2). The court disagreed, holding that

[t]he existence of the government's breach is the law of the case, and the purpose of this summary judgment action is to apply that law--to the extent

⁸ On May 11, 2007, the United States filed a notice of appeal of the court's decision. See Notice of Appeal, Dkt. No. 272. However, after filing its appeal with the Federal Circuit, the government filed a brief opposing the consideration of the case by the Federal Circuit on the grounds that "the [Court of Federal Claims] did not finally adjudicate any separate claims for relief and . . . abused its discretion in determining that there was no just reason for delay." Mot. of the Appellant United States to Dismiss the Appeal for Lack of Appellate Jurisdiction 1, Osage Tribe of Indians of Okla. v. United States, No. 2007-5120 (Fed. Cir.). On January 9, 2008, the Federal Circuit issued an order returning the case to the trial court, ruling that the Tranche One trial judgment could not be certified as a final judgment for immediate appeal. See Osage Tribe of Indians of Okla. v. United States, 263 F. App'x 43, 44-45 (Fed. Cir. 2008) (unpublished table decision).

⁹ Discovery and litigation regarding Tranche Two claims are proceeding separately. Discovery on Tranche Two issues closed on December 22, 2009, Order of Oct. 2, 2009, Dkt. No. 433, and a trial has not yet been scheduled.

it is legally appropriate to do so--to the broader Tranche One time periods, using the Tranche One trial months and leases as representative examples of the application of the law to each regulatory time frame at issue.

Id. at 7. As is discussed in more detail below, see infra Part I.C (discussing Osage IV), the court found that a trial was necessary to resolve issues pertaining to the use of Koch data and to the allocation of interest credits, Osage IV, 93 Fed. Cl. at 40, and subsequently scheduled a trial for June 30 and July 1, 2010, Order of May 5, 2010, Dkt. No. 518, at 3, 4 (noting that July 1, 2010 would be available if needed). During pre-trial briefing, the court determined that a third issue, the gravity adjustment issue, warranted further examination during the trial. Order of June 21, 2010 at 2; see also infra Part I.D (discussing pre-trial briefing). The court now discusses how Osage II provides context for these three issues.¹⁰

B. Osage II

On September 21, 2006 the court issued its Osage II opinion after a ten-day trial (Tranche One trial). The court held, inter alia, that plaintiff is entitled to damages for defendant's breach of its duties to collect oil royalties based on highest offered prices and to invest properly the oil royalties once collected. Osage II, 72 Fed. Cl. at 661, 671. In finding that defendant had breached its duty to collect oil royalties in accordance with the highest offered prices, the court analyzed whether defendant had properly interpreted the Osage Regulations that established royalty value. See id. at 643-51. With respect to defendant's breach of its duty to invest properly the oil royalties once collected, the court examined whether defendant achieved an appropriate investment yield for a prudent investor. See id. at 662-71.

1. Interpretation of the Osage Regulations Establishing Royalty Value

The government's duty to collect oil royalty payments--and to verify that the proper amounts have been paid--is specified by the 1906 Act, the Osage Regulations and the Osage oil leases. Id. at 635. Oil royalty payments are calculated using the following formula: Royalty Due = Royalty Rate x Volume x Royalty Value. Id. at 636. Royalty rate is usually expressed as a fraction or a percentage of the value of production and, since 1950, has been set by the Osage Tribal Council (subject to approval by the Secretary of the Department of the Interior). Id. (citing Pub. L. No. 548, 64 Stat. 215 (1950)). Royalty value is expressed in dollars and cents per barrel of oil and is governed by the applicable leases and Osage Regulations. Id.

¹⁰ The court discusses only those issues addressed in Osage II that are relevant to the June 30 and July 1, 2010 trial.

The parties disputed the proper interpretation of the regulations that were in effect from January 1981 to September 12, 1990 (1974 Regulations).¹¹ Osage IV, 93 Fed. Cl. at 15-21. The 1974 Regulations provided, in pertinent part: “payment shall be made at the time of sale or removal of the oil, . . . and settlement shall be based on the actual selling price, or the highest posted or offered price by a major purchaser in the Kansas-Oklahoma area whichever is higher on the day of sale or removal.” 25 C.F.R. § 183.11(a)(2) (1975) (1974 Regulations) (emphasis added). The court held that the 1974 Regulations

require royalty payments to be based on the higher of (1) the actual selling price received by a lessee, or (2) the highest posted or offered price in the Kansas-Oklahoma area made by a major purchaser--even where that highest price was posted or offered by a purchaser who did not also buy crude oil from Osage lessees.

Osage II, 72 Fed. Cl. at 639. The court found that the 1974 Regulations employed the term “offered price” “as a means of capturing the market value represented by bonus or premium payments that were offered to some but not all producers by a major purchaser over the posted price.” Id. at 644. That is, in the oil industry, an offered price can represent what a purchaser is prepared to pay--above the posted price--in order to secure its needed supply of crude oil.¹² See id. The court concluded that plaintiff is entitled to royalties for the Tranche One trial months for the Tranche One trial leases “based on the higher of ‘the actual selling price, or the highest posted or offered price by a major”

¹¹ Although the 1974 Regulations became effective on July 22, 1974, Osage II, 72 Fed. Cl. at 638 (citing 39 Fed. Reg. 22,254 (June 21, 1974); 25 C.F.R. § 183 (1975)), federal price controls governed the price of oil from July 1974 until December 1980, id. at 659 (citing 10 C.F.R. §§ 211.61, 212.2 (1975)). The court granted plaintiff’s motion for summary judgment with respect to royalty payments owed to the Tribe from July 1974 to December 1980. Osage IV, 93 Fed. Cl. at 15.

The court erred in Osage IV by using the publication date, rather than the effective date, of the succeeding regulations establishing royalty value--25 C.F.R. 226.11 (1990 Regulations). Compare Osage IV, 93 Fed. Cl. at 13, 15 (stating that the 1974 Regulations were in effect until August 13, 1990), with Leasing of Osage Reservation Lands for Oil and Gas Mining, 55 Fed. Reg. 33,112 (Aug. 14, 1990) (stating that the effective date of the 1990 Regulations is September 13, 1990).

¹² If the producer accepts this bonus or premium offer, it becomes a “realized” offer or actual selling price. Osage II, 72 Fed. Cl. at 645. “Once accepted, the bonus or premium above the posted price becomes a valid indicator of the actual market price for crude oil.” Id. However, the measure in the 1974 Regulations is “highest . . . offered price,” 25 C.F.R. § 183 (1975), not “the actual market price for crude oil.” See infra Part III.A.2.b.i.b) (discussing absence of the term “market price” in the 1974 Regulations).

purchaser in the Kansas-Oklahoma area . . . on the day of sale or removal.” *Id.* at 649 (emphasis in original) (quoting 25 C.F.R. § 183 (1975)).

Although the court recognized “that reliable data on the highest offered price from major purchasers in the Kansas-Oklahoma area outside of Osage County were difficult to acquire,” *id.* at 653, the court found that the Osage Agency “failed to employ procedures reasonably calculated to result in compliance with the 1974 Regulations,” *id.* at 654. The court further found that government records, such as data from the Mineral Management Service (MMS) or the Oklahoma Tax Commission, could serve as “a satisfactory proxy.” *Id.* The court concluded that “[p]laintiff is entitled to have its royalties calculated, as nearly as may now reasonably be determined, in accordance with the requirements of the 1974 Regulations.” *Id.* at 649-50.

The parties also disputed whether the Osage Regulations allowed for downward adjustment of posted prices based on the gravity of the oil in the calculation of royalty value. *Id.* “The gravity of crude oil is a measurement of its specific gravity expressed in degrees on a scale developed by the American Petroleum Institute (API).”¹³ *Id.* at 649. Gravity adjustment is an oil industry standard practice that sets different market values for different qualities of oil. *Id.* Plaintiff argued that “because the ordinary practice of adjusting posted prices according to the gravity of the oil was not expressly stated [in the Osage Regulations], it should not be followed.” *Id.* at 650. The court disagreed, holding that the Osage Agency properly adjusted prices to reflect degrees of gravity. *Id.*

2. Interpretation of the Law Governing the Investment Duty of the United States as Trustee

The court approached defendant’s investment-related breaches by dividing them into three categories: (1) defendant’s failure to deposit funds promptly (deposit-lag breach); (2) defendant’s failure to maintain appropriate cash balances (underinvestment breach), and (3) defendant’s failure to obtain investment yields in accordance with law (underperformance breach). *See id.* at 661-71. In carrying out its investment duties, the court found that defendant should be “measured by a standard of prudence, ‘a prudent investor’ standard.” *Id.* at 662. However, the court also found that defendant “had the further responsibility to comply with the legal requirements applicable to those duties, including the federal statute governing the investment of Indian trust funds, 25 U.S.C. §§ 161a, 161b, 162a, applicable regulations, and applicable case law and common law.” *Id.*; *see also id.* at 667 (citing Shoshone Indian Tribe of the Wind River Reservation v. United

¹³ “‘A gravity adjustment is on price bulletins that a purchaser publishes and says that if the gravity is, for instance, less than 35 degrees, they will deduct 10 cents per tenth of a degree or 10 cents per degree The American Petroleum Institute devised a gravity scale and . . . the median or the good stuff is at 40 degrees’” *Osage II*, 72 Fed. Cl. at 650 (quoting 2006 Tr. 220:22-221:22 (Mr. Reineke)).

States (Shoshone), 364 F.3d 1339, 1353 (Fed. Cir. 2004) for the proposition that United States Court of Appeals for the Federal Circuit “has previously held that 25 U.S.C. §§ 161a, 161b, and 162a mandate payment of interest”) (emphasis in original). The court recognized that, over the past century, Congress has enacted legislation that “has consistently required the United States to increase the productivity of funds it holds in trust for Indian tribes.” Id. at 668 n.26 (citing Chippewa Cree Tribe of the Rocky Boy’s Reservation v. United States, 69 Fed. Cl. 639 (2006)).

Plaintiff relied on data derived from the Arthur Andersen Trust Fund Reconciliation Project report (TRP or Andersen Report)¹⁴ to evaluate defendant’s investment results. Id. at 669. Plaintiff found reliance on the Andersen Report necessary because “BIA’s accounting system for tribal trust funds has been in disarray for many years Thus, deficiencies and gaps endemic to BIA’s accounting system prevent the kind of lease-by-lease, deposit-by-deposit analysis that would allow the [Tribe] as beneficiary to hold the United States accountable for the particulars of its investments in Tranche One.” Id. at 670 n.29 (internal quotations omitted). The court considered plaintiff’s approach to be a reasonable means of evaluating investment performance in the absence of complete records. Id. at 670.

¹⁴ The Andersen Report was required by Congress in an effort to correct problems in BIA accounting for tribal trust funds; the report took five years and cost \$21 million to complete. Osage IV, 93 Fed. Cl. at 26; see also id. at 35 (“When Congress directed the Department of the Interior to provide an accounting, it reported that it was unable to perform an audit due to the dearth of documentation. Instead Interior produced the [Andersen Report].”); see generally PX 513 (United States General Accounting Office [(GAO)], Report to the Committee on Indian Affairs, U.S. Senate, Financial Management, BIA’s Tribal Trust Fund Account Reconciliation Results, May 1996 (GAO Rpt.)) (describing the Trust Fund Account Reconciliation Project (TRP)). Defendant’s expert, Mr. Chavarria, managed the TRP. Nov. 10, 2009 Tr. 10:6-10:11 (Mr. Chavarria). “Despite its moniker, [the Andersen Report] did not even include a full reconciliation of known transactions, which was impossible due to the absence of records.” Osage IV, 93 Fed. Cl. at 35; see PX 513-0003 (GAO Rpt.) (“[T]ribal accounts could not be fully reconciled or audited due to missing records and the lack of an audit trail in BIA’s systems.”). In January of 1996, BIA presented the Tribe with summarized statements of account and an Agreed-Upon Procedures and Findings Report, both of which were developed by Arthur Andersen. See PX 513-0007 (GAO Rpt.); Tr. 233:21-234:5 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.’s counsel) (stating that references to BIA’s contractor in PX 513-0007 are to Arthur Andersen); PX 476 (Arthur Andersen, U.S. Department of the Interior, Bureau of Indian Affairs, Tribal Trust Funds Reconciliation Project, Agreed-Upon Procedures and Findings Report for Osage Nation of Oklahoma, July 1, 1972 Through September 30, 1992 (Andersen Rpt.)); JX 150 (Andersen statements of account).

C. Osage IV¹⁵

As noted above, see supra Part I.A, in Osage IV the court relied--to the extent the court found it legally appropriate to do so--on the law of the case as established in the eleven-year history of the Osage dispute in its determination of plaintiff's summary judgment motion. Osage IV, 93 Fed. Cl. at 7. The court's Osage IV opinion took into account the fact that the proper discharge of the government's duties to collect and invest royalties required the United States, as trustee, to "keep and generate the very records upon which plaintiff would now need to rely to meet its summary judgment burden of proof as movant." Id. at 8. The court noted that the "government has consistently failed and refused to fill the gaps in the historical record, citing time and money concerns," id. at 20, and held that "allow[ing] the government to reduce its damages by relying on a hypothetical performance of duties it in fact failed to perform would run afoul of the standard established by [Confederated Tribes of the Warm Springs Reservation v. United States (Warm Springs), 248 F.3d 1365, 1373 (Fed. Cir. 2001)]," id. at 13; see also infra Part II (discussing Warm Springs in detail). The court concluded that, in the absence of material factual disputes, "it is appropriate to apply the liability holdings of Osage II and Osage III to the broader time periods for which plaintiff claims damages in its summary judgment motion." Osage IV, 93 Fed. Cl. at 13.

1. Oil Royalty Under-Collection Breaches: Offered-Price Breach

The court analyzed plaintiff's oil-royalty under-collection claims in accordance with the royalties due under the Osage regulations, "consistent with the construction of those regulations in the [c]ourt's Tranche One [trial] decisions." Id. (alterations in original). The court noted that four distinct time periods existed between July 1974 and December 2000--each with different regulatory requirements--each requiring different calculations to determine royalties due to the Tribe.¹⁶ Id. The court found that genuine issues of material fact existed for the time period governed by the 1974 Regulations: January 1981 to September 12, 1990, id. at 15-25; see also supra Part I.B.1 (discussing the 1974 Regulations); supra note 11 (explaining that the 1974 Regulations were in effect until September 12, 1990).

¹⁵ This Opinion discusses only those issues addressed in Osage IV that are relevant to the June 30 and July 1, 2010 trial.

¹⁶ These four time periods are: (1) July 1974 to December 1980 (governed by the 1974 Regulations as affected by government-imposed price controls), see supra note 11 (discussing the effect of price controls on the 1974 Regulations), (2) January 1981 to September 12, 1990 (governed by the 1974 Regulations), see id. (explaining that the 1974 Regulations were in effect until September 12, 1990), (3) September 13, 1990 to May 1994 (governed by the 1990 Regulations), and (4) May 1994 to December 2000 (governed by the 1994 Regulations), Osage IV, 93 Fed. Cl. at 13.

Owing to the government's failure to maintain adequate records, plaintiff's expert Mr. Daniel Reineke used the Joint Database--which Mr. Reineke developed jointly with defendant's expert, Mr. Ronnie Martin¹⁷--to determine the highest posted or offered price in the Kansas-Oklahoma area pursuant to the 1974 Regulations. Osage IV, 93 Fed. Cl. at 14. The Joint Database consists of, inter alia, "posted prices from the major purchasers, the 'highest posted price letter' published by the Osage Agency, [and] the prices received by the Osage Agency for sales occurring on the Reservation." Pl.'s Mot. Summ. J., Ex. 2 (Declaration and Expert Report of Daniel T. Reineke, P.E. (Reineke Rpt.)) 10; see also Reineke Rpt. 5 (listing the information contained in the Joint Database); Def.'s Resp. to Pl.'s Am. Mot. for Partial Summ. J., Dkt. No. 420, Ex. A (Declaration and Expert Report of Ronnie A. Martin (2009 Report or Martin Rpt.)) 8 (same). The Joint Database, which "indisputably contains incomplete production data from the Osage Agency," lacks any data on offered prices outside Osage County and also lacks data on offered prices in Osage County that did not result in sales. Osage IV, 93 Fed. Cl. at 16. However, plaintiff also sought damages based on major purchaser offered-price data--data required under the 1974 Regulations to be used to calculate royalties but missing from the Joint Database. Defendant has strenuously opposed this portion of plaintiff's claim.

a. Koch Data

In particular, plaintiff took the initiative to remedy the total absence from the Joint Database of any offered price data from outside Osage County by subpoena of Koch Industries, Inc. (Koch),¹⁸ Osage IV, 93 Fed. Cl. at 16, a major oil purchaser in the Kansas-Oklahoma area, see Tr. 378:7-16 (colloquy between Mr. Reineke and Mr. Kim (def.'s counsel)). Koch provided lists, covering each day from January 1981 to December 1990, showing "the top 50 highest[-]priced leases for each day [(Koch Top 50 Lists)]." Osage IV, 93 Fed. Cl. at 16 (alterations in original); see infra Part III.A.1 (discussing generation of the Koch Top 50 Lists). Mr. Reineke relied on the Koch Top 50 Lists to calculate a reasonable estimate of the damages owed to the Tribe under the 1974 Regulations. Id. at 20. Mr. Reineke's methodology was "to compare the highest

¹⁷ Mr. Reineke and Mr. Martin "worked together to collect the data that [they] thought would be helpful . . . to calculate the information about royalty payments and . . . to verify what had happened historically." Tr. 547:17-21 (Mr. Martin). Mr. Martin and his staff compiled the data "which came primarily from the United States' records from archives and other agency documents Mr. Reineke contributed things like posted price bulletins . . . , and so it was a repository of all the data that [they] could find that [they] thought was going to be used" Id. at 547:22-548:4.

¹⁸ "Koch was asked to locate information that would provide an answer to the question 'What was the highest price offered for oil in Oklahoma and Kansas on each day from January 1, 1981 through September 12, 1990?'" Reineke Supp. Rpt. 2; see also Tr. 70:10-71:3 (colloquy between Mr. Klager and Mr. Godfrey (pl.'s attorney)).

posted or offered price from the Joint Data[b]ase to the highest offered price by Koch, then base his royalty calculation on the highest price after adjusting for gravity.” *Id.* at 16. The government contested the validity and accuracy of the Koch data. *Id.* at 16-20. In its initial consideration of the reliability of the Koch data, the court found that “the government has failed to raise a dispute regarding material facts that might affect the outcome of the suit sufficient to preclude the entry of summary judgment.” *Id.* at 20 (finding that “the Koch data is sufficiently reliable to fill in the gaps in the Osage Agency’s incomplete historical records”). After further proceedings, however, the court concluded that it would hear trial testimony on the issue of the reliability of the Koch data. *See* May 5, 2010 Telephonic Status Conference (TSC) Tr. 42:20-22 (court), Dkt. No. 522 (“[W]e are going to have a trial on the issue of the offered price data. I think that’s going to supplant my summary judgment on this.”); *see also infra* Part I.D. (discussing the court’s rescission of its summary judgment with respect to the reliability of the Koch data).

In ordering trial on the offered price evidence contained in the Koch data, the court recognized and addressed the evidentiary tension created by the interplay between Rule 56(e) of the Rules of the United States Court of Federal Claims (RCFC) and Rule 703 of the Federal Rules of Evidence as applied to the Koch Top 50 Lists. *Osage IV*, 93 Fed. Cl. at 20. Under RCFC 56(e), an affidavit supporting a motion for summary judgment must “set out facts that would be admissible in evidence.” RCFC 56(e)(1). Rule 703 of the Federal Rules of Evidence allows an expert to base an opinion or inference on data “of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject [and] the facts or data need not be admissible in evidence in order for the opinion or inference to be admitted.” Fed. R. Evid. 703. Plaintiff argued that the Koch data is “of a type reasonably relied upon by experts” in the relevant field. *Osage IV*, 93 Fed. Cl. at 20. Defendant countered that it was entitled to an opportunity to review the data underlying the Koch Top 50 Lists, *id.*, as would be the case in connection with the examination of an expert in trial. The court concluded that a trial was necessary and appropriate to address plaintiff’s reliance on the Koch Top 50 Lists. *Id.* at 21. The court stated that the purpose of the anticipated trial was to resolve the question of “whether plaintiff may rely on price information generated by Koch . . . to supplement lease prices contained in the Joint Database.” *Id.* at 40.

b. Gravity Adjustment¹⁹

As a further remedy for defendant’s failure to collect and maintain the data required of it under the 1974 Regulations, Mr. Martin and Mr. Reineke--in connection with their creation of the Joint Database--developed gravity-adjustment scales for each

¹⁹ This Part I.C.1.b is organized in accordance with the corresponding discussion of issues below in Part III.B, rather than the court’s organization of the issues in *Osage IV*.

month for each of the major purchasers. Pl. Osage Nation's Reply Br. in Support of its Am. Mot. for Summ. J. on all Oil-Royalty Under-Collection Claims for July 1974 to December 2000 and All Deposit-Lag, Excessive-Cash-Balance, and Investment-Yield Claims for Accounts 7386 and 7886 for United States Fiscal Years 1973 to 1992, Dkt. No. 428 (Pl.'s Reply), Ex. 17 (July 14, 2009 Dep. of Ronnie Martin), Tr. 18:13-19:13²⁰; Reineke Rpt. 5. Ideally, the experts would have had access to "the gravity scales for each and every purchaser for all the timeframes and . . . the 40-degree price for each purchaser," Tr. 309:20-24 (Mr. Reineke); however--because this information was not available--Mr. Reineke and Mr. Martin "determined the posted prices and gravity tables from the various pricing bulletins of the major purchasers or published reports of pricing bulletins," Martin Rpt. ¶ 19; see also id. ¶ 11 ("The Agency published a monthly letter that . . . set out the highest posted price for each gravity. The Agency determined the highest available price for each gravity by using each major purchaser's gravity adjusted posted price using that poster's gravity scale."). In accordance with the court's Tranche One ruling, see Osage II, 72 Fed. Cl. at 650, the parties employed these gravity scales to normalize the highest offered prices to the 40-degree API gravity standard, Reineke Rpt.

²⁰ Rule 201 of the Federal Rules of Evidence affords the court the authority to take judicial notice of a fact that is "not subject to reasonable dispute" such that it is "capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned." Fed. R. Evid. 201(b). Pursuant to Rule 201, the court has taken judicial notice of several adjudicative facts, including: dictionary definitions of basic statistical terms, see infra notes 47-49 (discussing the court's consultation of statistics dictionaries), testimony given in prior proceedings in this litigation, see infra note 53 (discussing the court's use of the 2006 trial testimony of Mr. Charles Hurlburt), and exhibits previously admitted, see infra note 87 (discussing the court's use of an exhibit admitted during the 2006 Tranche One trial). "[O]nly a rare case insists that a judge must notify the parties before taking judicial notice of a fact on his own motion, and some authorities suggest that such a requirement is needless." 2 McCormick on Evidence § 333 (Kenneth S. Broun ed., 6th ed. 2006). Although the court's proposed use of judicial notice could reasonably be viewed as uncontroversial, the court notified the parties of its intention to take judicial notice and provided them an opportunity to be heard. See generally Order of Dec. 9, 2010, Dkt. No. 599; see also Fed. R. Evid. 201(e) advisory committee's note ("An adversely affected party may learn in advance that judicial notice is in contemplation . . . through an advance indication by the judge."). After careful consideration of the arguments presented by defendant against the taking of judicial notice, the court concluded that its use of judicial notice was proper and satisfied "considerations of fairness or due process." Order of Dec. 9, 2010 at 4.

In its Order of December 9, 2010, the court also gave notice to the parties of its intention to take additional judicial notice of the July 14, 2009 Deposition of Ronnie Martin. Id. at 9. In order "to ensure that it preserves its rights in this regard," defendant objected to the court's use of judicial notice. Def.'s Opening Br. Regarding Further Judicial Notice, Dkt. No. 601, at 2. For the reasons set out in its Order of December 9, 2010, the court concluded that its use of judicial notice is proper and satisfies considerations of fairness and due process.

3; see Tr. 549:1-4 (colloquy between Mr. Martin and Mr. Philpott (def.'s counsel)) (stating that Mr. Martin used these gravity scales in his 2009 Report).

The experts did not agree, however, on the methodology used to calculate the highest offered price at a gravity other than 40 degrees. The gravity-adjustment methodology employed by Mr. Reineke involved “first determining the highest 40-degree price by normalizing purchase prices, and then gravity-adjusting the highest 40-degree price to the actual gravity of the Osage oil being valued for royalty purposes--using the purchaser’s adjustment scale for Osage County.” Osage IV, 93 Fed. Cl. at 22. Plaintiff asserted that Mr. Reineke’s methodology was reasonable and was consistent with the methodology agreed upon by the parties during the Tranche One trial. See id.; see also Osage III, 75 Fed. Cl. at 469 (stating that “[t]he parties . . . agree[d] to the amount of the gravity adjustment deduction to be used in determining royalty undercollections for Tranche One”). Defendant argued that Mr. Martin employed a more appropriate method of gravity adjustment to the Koch data, which involved the Osage Agency’s practice of creating a matrix of the highest prices at each tenth of a degree. Osage IV, 93 Fed. Cl. at 21. However, Mr. Martin admitted that this method was “unique” to the Agency and “has never been used by any entity before or since.” Id. at 22. The court concluded that Mr. Reineke’s gravity-adjustment methodology was reasonable, finding support for its conclusion in the fact that Mr. Martin had himself used the methodology employed by Mr. Reineke, rather than the “unique” matrix methodology employed by the Agency, when he served as an expert for the government in a different case, Shoshone & Arapaho Indian Tribes of the Wind River Reservation v. United States, Nos. 79-458 L and 79-459 L (Fed. Cl.). Id. The court held that defendant had failed to raise a genuine issue of material fact and, “a fortiori, to make a case that plaintiff’s approach is somehow unreasonable under the standard of Warm Springs.” Id.; see supra Part II (discussing Warm Springs). The court concluded that “[d]efendant may not now relitigate this issue. The methodology applied during the Tranche One trial will control.” Osage IV, 93 Fed. Cl. at 22.

Defendant also challenged Mr. Reineke’s 40-degree price calculations, claiming that Mr. Reineke used Koch’s gravity scale for transactions that, according to Mr. Martin, had either been based on the Agency’s highest posted price (HPP) letter or had already been “deemed”²¹ 40 degrees. See Supplemental Expert Report of Ronnie A. Martin (Martin Supplemental Report or Martin Supp. Rpt.), Dkt. No. 527, ¶ 35. Defendant first argued that Mr. Reineke “fabricated” royalty values by “erroneously . . . applying a purchaser-specific gravity scale” to 268,848 royalty transactions that were actually based

²¹ When a price is “deemed” at 40 degrees, “it means that the oil is considered to be at 40 [-degree] gravity for valuation purposes even though the oil is physically not 40[-degree] gravity.” Osage IV, 93 Fed. Cl. at 22 n.19 (quoting Martin Rpt. ¶ 49 n.21). “The practice of deeming was common in the crude oil industry during this time period. Koch often deemed the gravity to 40 [degrees] for transactions in the 30-40[-degree] range.” Martin Rpt. ¶ 49 n.21.

on the Agency's HPP letter "and not the purchaser's transaction price." Osage IV, 93 Fed. Cl. at 21 (internal citations omitted). Defendant claimed that this approach was erroneous for two reasons: "(1) because the HPP value comes from a matrix created by the Osage Agency, which already takes into account the highest postings for each gravity, making adjustment unnecessary, and (2) because Mr. Reineke's analysis creates historical 'offered prices' that never existed." Id. (internal citations omitted). Plaintiff countered that defendant had "not produced a shred of evidence to support this theory." Id. (internal quotations omitted). The court agreed with plaintiff, finding "that defendant is asking the court to draw an inference against the Tribe that is not supported by the evidence and is likely contrary to the facts." Id. Defendant also criticized Mr. Reineke's application of gravity adjustment "for transactions for which the price had already been 'deemed' at 40 degrees, leading plaintiff to determine inaccurately the HPP for certain dates." Id. at 22. Plaintiff countered that--because defendant did not know the terms of each sale--defendant's theory requires an assumption that these were sales of oil deemed at 40 degrees, rather than sales of 30-degree oil for which bonuses were being paid. Id. Mr. Reineke further argued that defendant had failed to produce evidence that the Koch transactions "have some gravity scale other than the one agreed to in the Joint Data[b]ase for Koch for those months." Id. (internal quotations omitted). The court agreed with plaintiff, finding that "the government's unsupported allegation neither challenges the reasonableness of Mr. Reineke's approach nor creates a dispute concerning a genuine issue of material fact." Id.²²

2. Breaches of the Duty to Invest Prudently: Underperformance Breach

In Osage IV, the court held that plaintiff could apply the damages calculations derived for the Tranche One trial months and leases resulting from defendant's deposit-lag breach and underinvestment breach to the broader Tranche One time period. Osage IV, 93 Fed. Cl. at 30-31. With respect to the government's investment-underperformance breach, however, the court found that a genuine issue of material fact existed as to whether plaintiff "has given defendant proper credit for interest payments made to the Tribe from fiscal years 1973 to 1977." Id. at 40.

"Because the United States has never provided plaintiff with an accounting of trust revenues and it is doubtful whether such records still exist," plaintiff relied on the Andersen Report to estimate the investment-underperformance damages it is owed. Id. at 26 (internal quotations omitted); see supra note 14 (explaining the genesis of the Andersen Report); see infra Part III.C (discussing the Andersen Report in more detail). For each year from fiscal year (FY) 1973 to FY 1977, plaintiff examined three categories

²² As noted above in Part I.A (providing an overview of the litigation), during pre-trial briefing, the court determined that gravity adjustment warranted further investigation during the June 30 and July 1, 2010 trial. Order of June 21, 2010, Dkt. No. 539; see infra Part I.D (discussing the court's rulings on pre-trial briefing).

of receipts (Treasury or Overnighter Interest, Interest on CDs and Interest on Government Securities) from the Andersen summarized statements of account²³ and concluded that defendant paid no interest to plaintiff for FY 1973 to FY 1976 and paid only partial interest in FY 1977. Osage IV, 93 Fed. Cl. at 32-33. Defendant's expert, Mr. Chavarria, criticized this approach, claiming that a discrepancy exists between the interest credits plaintiff identified for FY 1973 to FY 1977 and the "actual interest postings in accounts 7386 [(the Osage account for revenue)] and 7886 [(the Osage account for all subsequent Treasury interest postings)] from the Tribal Trust account data used by Arthur Andersen."²⁴ Osage IV, 93 Fed. Cl. at 33; Def.'s Resp. to Pl.'s Am. Mot. for Partial Summ. J., Ex. H, Decl. [and Report] of Gregory J. Chavarria (Chavarria Report or Chavarria Rpt.), Dkt. No. 420, ¶ 12; see Osage II, 72 Fed. Cl. at 670 (defining account 7386 as the Osage trust fund for revenue); Osage IV, 93 Fed. Cl. at 33-34 (characterizing account 7886 as an "account designated and utilized for all of the subsequent [T]reasury interest postings").

Plaintiff subsequently "withdrew its motion for summary judgment solely regarding the 'dispute over whether the transactions in columns B, C, and D, of Exhibit 5, Schedule [1]A'" of the Chavarria Report "should have been included in plaintiff's calculations as credits to the government." Osage IV, 93 Fed. Cl. at 32 (quoting Pl.'s Reply 39). Schedule 1A of the Chavarria Report presents three columns of data under the overall heading "Interest Excluded by Plaintiff": Column B ("U.S. Treasury/Overnighter"), Column C ("CD and Gov't Security") and Column D ("Other"). Chavarria Rpt., Ex. 5 (Schedule 1A); Osage IV, 93 Fed. Cl. at 33. The Chavarria Report contends that plaintiff failed to credit defendant with \$942,938.36 in interest payments made to plaintiff in these categories from FY 1973 through FY 1977. Osage IV, 93 Fed. Cl. at 33.

The court held an evidentiary hearing on November 10, 2009 (November 2009 hearing) in an effort to narrow the issue of whether the transactions in Schedule 1A of Mr. Chavarria's expert report should be credited to plaintiff. Id. at 32. The purpose of the November 2009 hearing "was to understand the accounting record evidence while taking into account the deference owed to the Tribe's damages calculation under Warm Springs." Id.; see also infra Part II (discussing Warm Springs in detail).

²³ The Andersen statements of account, JX 150, consist of "a cover page that is titled Summarized Statement of Account . . . followed by a transactional log that is titled simply Statement of Account." Nov. 10, 2009 Tr. 34:16-21 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.'s counsel)).

²⁴ The court provides a more detailed discussion of the parties' respective interest credit analysis below, in Part III.C. Several issues discussed in Osage IV were reexamined during the June 30 and July 1, 2010 trial and subsequent briefings.

Defendant claimed that, for the years prior to FY 1978, the Andersen statements of account “showed too few interest credits, requiring one to ‘look beyond the Statements of Account[’s] summary pages and investigate ‘other’ receipts in the supporting detail for those account statements’ in order to account properly for interest payments made to the Tribe.”²⁵ Osage IV, 93 Fed. Cl. at 33 (quoting Def.’s Opening Post-Trial Br. Regarding Interest Credits for 1972-77, Dkt. No. 453, at 3-4) (internal citations omitted). Mr. Chavarria’s investigation included cross-referencing “data points between the Andersen [R]eport and other documents, such as investment reports and account statements for accounts 7386 and 7886.” Id. Mr. Chavarria also testified that he attempted to identify interest payments by searching for transaction codes that indicated interest-related transactions in tribal trust documents. Id. at 33-34 (citing Nov. 10, 2009 Tr. 120:25-121:15, 126:25-127:4, 126:13-19 (Mr. Chavarria)).

The court agreed with plaintiff that the government’s new interest credit analysis “must be met with great skepticism following the standard of Warm Spring[s].” Id. at 34 (internal quotations omitted). The court also observed:

[I]t is clear that while plaintiff has repeatedly pressed the government for a more complete accounting of the tribal trust records for the Osage and other tribes, the government has refused on the grounds that such exercises would not be cost-effective. However, now that performing a more thorough analysis of the data may financially benefit the government, it has picked a few of the gaps in the investment analysis where it thinks it can gain some ground, and revise[d] those based on a small selection of documents that [Arthur] Andersen was told not to analyze.

Id. (internal citations and quotations omitted). The court nevertheless provided the government with the opportunity to counter plaintiff’s interest credit calculation for FY 1973 through FY 1977. Id.

The court also determined that plaintiff had not been afforded an adequate opportunity to respond to the new data and analysis presented by Mr. Chavarria during the November 2009 hearing. Id. “It is undisputed that in preparing his new analysis, Mr. Chavarria went beyond the accounting provided to the Osage Tribe through the Andersen [Report] in order to conclude that credits were missed by plaintiff in making its calculations.” Id. at 35 (internal quotations omitted). The court stated that, this late in the litigation,

[a]llowing the trustee to selectively reopen the 1973 to 1977 period would unfairly place the beneficiary in the position of either (a) accepting a systematically skewed revision of the trustee’s prior, objective report, or (b)

²⁵ The court provides a more detailed analysis of Mr. Chavarria’s methods in Part III.C below.

revisiting the entire documentary record to perform for itself the investment analysis the trustee has refused to perform, where some of the documents apparently were not previously produced to it.

Id. In fact, Mr. Chavarria admitted that he had “disregarded evidence on the trust fund investment reports that appeared to show Osage investment income for account 7386 that is missing from the Andersen [R]eport.” Id. Moreover, the court found that the data relied upon by Mr. Chavarria is “exactly the sort of information that plaintiff has been requesting of defendant for the past few years of litigation.” Id. Citing Osage II, the court observed that “the government has, on more than one occasion, created accounting analyses ‘based on inferences there were entirely favorable to the government,’ and, in some cases, not supported by evidence.” Id. (quoting Osage II, 72 Fed. Cl. at 670).

The court noted that, from the perspective of Warm Springs, it could rule in favor of plaintiff notwithstanding the factual dispute created by the government through Mr. Chavarria’s new analysis. Id. at 36. The court nevertheless decided that “as a prudential matter” it would address at trial “the evidence adduced by Mr. Chavarria and the government as the basis for this new analysis.” Id.

D. Rulings on Pre-Trial Briefing

Shortly before the court filed its April 30, 2010 Osage IV opinion, defendant filed its Further Motion Regarding Koch Data (defendant’s Koch Motion or Def.’s Koch Mot.), Dkt. No. 514. Defendant’s Koch Motion argued, inter alia, that defendant should be granted additional access to the Koch database under Rule 1006 of the Federal Rules of Evidence, Def.’s Koch. Mot. 12, which provides for the presentation in court of summaries if “[t]he originals, or duplicates, [are] made available for examination or copying, or both, by other parties at reasonable time and place,” Fed. R. Evid. 1006. Defendant claimed that additional discovery was necessary to answer questions stemming from its January 6 and April 9, 2010 meetings with Mr. Klager, the Koch employee who prepared the Koch Top 50 Lists.²⁶ Def.’s Koch. Mot. 2, 12; Order of May 5, 2010, Dkt. No. 518, at 1-2. Although defendant examined the database that generated the Koch Top 50 Lists during the April 9, 2010 meeting, defendant claimed that “meaningful compliance with Rule 1006” requires defendant’s access to an “electronic copy of the complete database.” Def.’s Koch Mot. 12. Plaintiff countered that Rule 1006 “has been satisfied[] because the electronic data reflected in the Top 50 Lists was ‘made available for examination’ at a ‘reasonable time and place.’” Pl. Osage Nation’s Opp’n to Def.’s Further Mot. Regarding Koch Data, Dkt. No. 515, at 1 (quoting Fed. R. Evid. 1006).

²⁶ “Mr. Klager generated the Koch Top 50 Lists ‘from a crude oil database that he had worked with on a daily basis in the 1980’s as part of his regular duties.’” Order of May 5, 2010, Dkt. No. 518, at 1 (quoting Resp. of Koch Industries, Inc. and Vance Klager to Def.’s Further Mot. Regarding Koch Data, Dkt. No. 517, at 1).

The court held TSCs on May 4 and May 5, 2010. See Order of May 5, 2010 at 2. During the May 5, 2010 TSC, the court rescinded its summary judgment ruling with respect to the reliability of the Koch data. See May 5, 2010 TSC Tr. 42:20-22 (court) (“[W]e are going to have a trial on the issue of the offered price data. I think that’s going to supplant my summary judgment on this.”). Further, the court issued an order granting defendant “access to the tables within the crude oil database that Mr. Klager drew from in developing the Koch Top 50 Lists and to the data fields included within these tables.” Order of May 5, 2010 at 2. Also pursuant to the parties’ discussions during the May 5, 2010 TSC, the court issued several scheduling orders, including a trial scheduled for June 30 and July 1, 2010 “[t]o address the unresolved issues set forth in the court’s [Osage IV] Opinion.” Id. at 3; see also id. at 4 (noting that July 1, 2010 would be available if needed).

On June 4, 2010 the parties filed a Joint Motion for a Telephonic Status Conference (Joint Motion), Dkt. No. 525. The Joint Motion stemmed from a dispute regarding the witnesses defendant could present at the June 30 and July 1, 2010 trial. Order of June 14, 2010, Dkt. No. 530, at 1. On May 28, 2010 defendant provided plaintiff with information on the availability of five witnesses, none of whom was identified during the May 4 and May 5, 2010 TSCs or addressed in the court’s May 5, 2010 Order. Id. at 1-2. Following a TSC held on June 7, 2010, the court issued an Order on June 14, 2010. Id. at 1. The June 14, 2010 Order stated that the trial would be confined to two issues: whether plaintiff may rely on Koch data pursuant to Rule 703 of the Federal Rules of Evidence (Koch data issue),²⁷ and “whether plaintiff accurately accounted for interest credits owed for fiscal years 1973 to 1977 (interest credit issue).”²⁸ Id.; see supra Parts I.C.1.a (discussing Koch data issue) and I.C.2 (discussing interest credit issue). The court also decided that the proffered witnesses--one of whom was

²⁷ In its discussion of the Koch data issue to be presented at trial, the court cited to RCFC 56(e), which pertains only to summary judgment motions. Order of June 14, 2010, Dkt. No. 530, at 1; see Def.’s Resp. to Pl.’s Mot. in Limine and Cross-Mot. in Limine Regarding Trial Beginning June 30, 2010, Dkt. No. 537, at 3 n.3 (noting the court’s error).

²⁸ On June 14, 2010 the parties filed a document titled Joint Stipulation Regarding Interest Credits for Fiscal Years 1973-1977 (Joint Stipulation), Dkt. No. 529. On June 17, 2010 the court held a Telephonic Status Conference (TSC) with the parties, during which the court expressed its concern that the so-called Joint Stipulation “neither agree[s] on the law nor the facts.” TSC Tr. 6:15-17 (court), Dkt. No. 535; see id. at 10:11-15 (“Instead of stating what you understand the law to be, you have refused to characterize the money, refused to state what it’s for, refused to state what law it’s under. It’s just chaos.”). The court suggested that the parties re-draft the Joint Stipulation so that it represents “a settlement for a finding of fact from the [c]ourt based on law, and if you can’t get to that, we’re trying it.” Id. at 9:11-17. Because the parties never submitted a second joint stipulation, the court tried the interest credit issue during the June 30 and July 1, 2010 trial.

Robert Daigle, “the former chief executive officer and president of TIPCO [Crude Oil Company (TIPCO)], a now defunct crude oil trading company that did business with Koch,” Order of June 14, 2010 at 3--would not assist the court in better understanding either the Koch data issue or the interest credit issue. Id. at 4-5. The court therefore declined to add defendant’s five additional proffered witnesses to the joint witness list. Id. at 5.

On June 16, 2010 plaintiff filed Plaintiff Osage Nation’s Motion in Limine to Exclude Irrelevant Testimony by Defendant’s Expert Ronnie Martin, and Motion to Expedite (plaintiff’s Motion in Limine or Pl.’s Mot. in Limine), Dkt. No. 533, in response to the Supplemental Expert Report of Ronnie A. Martin (Martin Supplemental Report or Martin Supp. Rpt.), Dkt. No. 527. Mr. Martin submitted his Supplemental Report after obtaining further information from the Koch database pursuant to the court’s May 5, 2010 Order. Martin Supp. Rpt. 3. In its Motion in Limine, plaintiff contended that defendant intended to present testimony by Mr. Martin “regarding issues that are not within the scope of the upcoming trial, and were already decided in [Osage IV].” Pl.’s Mot. in Limine 1. Specifically, plaintiff claimed that defendant intended for Mr. Martin to testify at trial regarding whether prices in the Koch Top 50 Lists associated with buy-sell agreements are “offered prices” under the 1974 Regulations and whether Mr. Reineke’s gravity adjustment analysis is erroneous.²⁹ Id. With respect to the Koch buy-sell agreement issue, defendant argued that Osage IV did not “conclusively determine” that prices arising from buy-sell agreements “are appropriate to form the basis of any damages judgment.” Def.’s Resp. to Pl.’s Mot. in Limine and Cross-Mot. in Limine Regarding Trial Beginning June 30, 2010, Dkt. No. 537, at 11. Defendant further countered that it “now has plenty of evidence”--after the court’s May 5, 2010 Order--and “there is thus no need for the [c]ourt to draw any inferences” with respect to Mr. Reineke’s gravity adjustment analysis. Id. at 4. The court denied plaintiff’s Motion in Limine and ordered both Mr. Reineke and Mr. Klager to be made reasonably available for depositions regarding these two issues. Order of June 21, 2010 at 2. The court also ordered that Mr. Daigle be made reasonably available for deposition because it was reconsidering its disposition of the inclusion of Mr. Daigle as a witness. Id.

²⁹ Plaintiff also claimed that defendant intended for Mr. Martin to testify regarding “the Osage Agency’s ability to obtain offered price data.” Order of June 21, 2010, Dkt. No. 539, at 2 (quoting Pl. Osage Nation’s Mot. in Limine to Exclude Irrelevant Test. by Def.’s Expert Ronnie Martin, and Mot. to Expedite, Dkt. No. 533, at 1); see Martin Supp. Rpt. ¶ 10 (“The Agency would not have been able to obtain sufficiently documented data relative to leases outside of Osage County in order to issue demands to Osage lessees for additional royalties based on the existence of ‘offered prices.’”). The court held that “the interpretation of the 1974 Osage Regulations is a matter of law. Testimony proffered to excuse noncompliance with this regulation . . . will be viewed by the court as in derogation of the court’s responsibility to determine and apply the law.” Order of June 21, 2010 at 3.

II. Legal Standards

Under general trust law, “a beneficiary is entitled to recover damages for the improper management of the trust’s investment assets.” Warm Springs, 248 F.3d at 1371. Courts determine the amount of damages for a breach of the trustee’s fiduciary duty by attempting to place the beneficiary in the position in which it would have been absent the breach. Id. (citing Roth v. Sawyer-Cleator Lumber Co., 61 F.3d 599, 604 (8th Cir. 1995); Donovan v. Bierwirth, 754 F.2d 1049, 1058 (2d Cir. 1985); William F. Fratcher, Scott on Trusts, § 208.3 (4th ed. 1987)). Moreover, where--as here--the “trustee fails to keep proper accounts, ‘all doubts will be resolved against [the trustee] and not in [the trustee’s] favor.’” Id. at 1373 (quoting Scott on Trusts, § 172) (citing Bigelow v. RKO Radio Pictures, Inc., 327 U.S. 251, 265 (1946) (“The most elementary conceptions of justice and public policy require that the wrongdoer shall bear the risk of the uncertainty which his own wrong has created.”)). Further, with respect to Indian Tribe beneficiaries, the “United States must be held to the most exacting fiduciary standards” because, “as domestic dependent nations, [Indian Tribes] were subjected to the imposition of the trustee-beneficiary relationship and have become reliant upon their trustee to carry out trustee responsibilities.” Shoshone, 364 F.3d at 1348 (internal citations omitted).

Warm Springs, a case involving the calculation of damages owed to Indian Tribes due to the breach by the United States of its fiduciary duty, provides controlling precedent for this court’s approach to the parties’ disputes about the damages to which the Tribe is entitled. In Warm Springs, the United States Court of Appeals for the Federal Circuit (Federal Circuit) held that Indian Tribes do not bear the burden of proving damages “that cannot be established with certainty” because of the United States’ failure to keep adequate records. Warm Springs, 248 F.3d at 1373, 1375. Specifically, the Federal Circuit held that “to the extent that the difficulty in determining the amount of loss suffered by the Tribes is attributable to improper accounting procedures followed by the BIA, the consequences of those difficulties should not be visited upon the Tribes.” Id. at 1375; see id. at 1373-74 (“[O]nce the beneficiaries have established their prima facie case by demonstrating the trustees’ breach of fiduciary duty, the burden of explanation or justification . . . shifts to the fiduciaries.” (internal quotations omitted)); Osage II, 72 Fed. Cl. at 670-71 (holding that, in the in the absence of accurate historical royalty and trust records, “[t]he Osage Tribe is entitled to damages reasonably estimated based on existing information”).

The United States, as defendant in Warm Springs, acted through the BIA as trustee for the management of timber within the Warm Springs Indian Reservation. Warm Springs, 248 F.3d at 1367; see also id. at 1370 (“Pursuant to statute and regulation, the United States exercises comprehensive control over the management and harvesting of timber on Indian reservations.”). The United States Court of Federal Claims (Court of Federal Claims) found that the BIA had breached its fiduciary duty to the Tribes in Warm

Springs by improperly harvesting and selling portions of the plaintiffs' healthy, green timber, id. at 1369-70, but nevertheless held that the plaintiffs were not entitled to damages for this breach, reasoning that it could "only speculate" as to the price certain green timber could have sold for "at some hypothetical time," id. at 1371.

The Federal Circuit disagreed with the trial court, finding that the facts of the case "do[] not require unguided speculation." Id. at 1372. The plaintiffs in Warm Springs presented evidence of their intended sales and the market prices for green timber during that time period. Id. Although unresolved factual issues remained, the Federal Circuit stated that the unresolved matters were "amenable to resolution within a reasonable degree of approximation, which is sufficient to support an award." Id. (citing Elec. & Missile Facilities, Inc. v. United States, 416 F.2d 1345, 1358 (Ct. Cl. 1969) ("[W]here responsibility for damages is clear, it is not essential that the amount thereof be ascertainable with absolute exactness or mathematical precision.")) (emphasis omitted)). The Federal Circuit also invoked the "long[-]standing [principle] in trust law that once the beneficiary has shown a breach of the trustee's duty and a resulting loss, the risk of uncertainty as to the amount of the loss falls on the trustee." Id. at 1371 (citing Donovan, 754 F.2d at 1056 ("Where several alternative investment strategies would have been equally plausible, the court should presume that the funds would have been used in the most profitable of these. The burden of proving that the funds would have earned less than that amount is on the [trustees]. Any doubt or ambiguity should be resolved against them.")); Wootton Land & Fuel Co. v. Ownbey, 265 F. 91, 99 (8th Cir. 1920) (stating that the burden of proof in an accounting is on the fiduciary to prove the amount of any credit)). In applying trust law principles, the Federal Circuit concluded that "the trial court must determine, as best it can under the circumstances," how much green timber was improperly harvested, the plaintiffs' intended date of sale of the timber, and its appropriate price. Id. at 1373. "That sum must then be compared with the amount received for the improperly harvested green timber Only in that manner will the Tribes receive the 'difference between the actual proceeds and the greatest appropriate revenue [that] should have been obtained.'" Id. (quoting Mitchell v. United States, 664 F.2d 265, 271 (Ct. Cl. 1981), aff'd, 463 U.S. 206 (1983)).

In addition to their claim for improper harvesting and selling of green timber, the Warm Springs plaintiffs claimed that the government failed to pay them for the sale of damaged timber. Id. The plaintiffs introduced evidence that the government's accounting records were seriously flawed. Id. at 1374. The Federal Circuit "recognize[d] the difficulties involved in trying to reconstruct the events that occurred . . . 11 years ago when the records are incomplete and may be unreliable." Id. at 1375. The Federal Circuit held, however, that "to the extent that the difficulty in determining the amount of loss suffered by the Tribes is attributable to improper accounting procedures followed by the BIA, the consequences of those difficulties should not be visited upon the Tribes." Id.

The Federal Circuit vacated and remanded the case to the Court of Federal Claims, id. at 1375-76, and directed that, when determining the amount of damages owed to the beneficiaries, they “are entitled to recover the difference between the actual proceeds and the greatest appropriate revenue [that] should have been obtained.” Id. at 1371 (internal quotations omitted); see Mitchell, 664 F.2d at 271 (holding that Tribe beneficiaries are entitled to recover “the proceeds of the sales [that] should have been made under proper management--not merely the actual proceeds of actual sales”).

The court rejects defendant’s contention that Warm Springs imposes upon plaintiff a “burden of demonstrating, as a basis for calculating damages, ‘the greatest appropriate revenue which should have been obtained.’” Def.’s Opening Post-Trial Br. for Trial Beginning June 30, 2010 (Def.’s Br.), Dkt. No. 569, at 14 (quoting Warm Springs, 248 F.3d at 1371). The Warm Springs language quoted by defendant does not pertain to plaintiff’s burden of proof. See Pl. Osage Nation’s Post-Trial Resp. Br. (Pl.’s Resp. Br.), Dkt. No. 572, at 2. Instead, the Federal Circuit referred to “the greatest appropriate revenue [that] should have been obtained” to explain the measure of damages owed to the plaintiff.³⁰ Warm Springs, 248 F.3d at 1373 (internal quotations omitted). As this court has previously recognized, “the law of this case is that defendant breached its fiduciary duties as trustee for the Osage Tribe Therefore it would be inappropriate now to require plaintiff to resolve all possible doubts raised by the government about the facts and data that the trustee failed to collect and maintain in the form of trust records.” Osage IV, 93 Fed. Cl. at 16. And where, as here, a lack of evidence is created by the malfeasance and nonfeasance of the trustee, plaintiff need not offer the best evidence that might conceivably be found. See Warm Springs, 248 F.3d at 1375. Accordingly, the Osage Nation is entitled to a reasonable estimate of the damages it is due. See Osage II, 72 Fed. Cl. at 654 (“Plaintiff is entitled to have its royalties calculated, as nearly as may now reasonably be determined, in accordance with the requirements of the 1974 Regulations”).

With respect to plaintiff’s use of the Koch data, introduced above in Part I.C.1.a, the court agrees with plaintiff that “the Koch data is much better data than the United States, as trustee in breach that did not keep records, is entitled to demand.” Pl.’s Resp. Br. 1. As plaintiff correctly points out, “[e]ven if no historical offered prices were available to calculate damages, the Osage Nation would be entitled, under the most elementary conceptions of justice and public policy, to use another reasonable method of

³⁰ Similarly, the court finds inapposite plaintiff’s argument that defendant “has utterly failed to carry [its] burden” “to ‘present competent evidence to support an alternative calculation of damages.’” Pl. Osage Nation’s Post Trial Br. (Pl.’s Br.), Dkt. No. 570, at 1 (quoting Osage IV, 93 Fed. Cl. at 9). As defendant correctly points out, the Osage IV passage cited by plaintiff “merely deals with the ‘burden’ on the party opposing summary judgment to show that there are material facts in dispute.” Def.’s Resp. Post-Trial Br. for Trial Beginning June 30, 2010 (Def.’s Resp. Br.), Dkt. No. 573, at 1.

estimation.” Id. (internal quotations omitted). Plaintiff claims that, instead of relying on the Koch data as a proxy for historical offered prices, “it could have extrapolated a certain percentage above average posted prices,” id., and the court agrees that extrapolation could be an acceptable basis for estimating damages. Of course, with respect to any method of estimation, plaintiff bears the burden of proving, by a preponderance of the evidence, that the method of estimation it has employed is reasonable.

The questions now before the court are whether, viewed through the prism of Warm Springs, plaintiff has met its burden of proving that: (1) its reliance on the Koch data to estimate a portion of the damages it is due is reasonable, (2) its gravity adjustment analysis is reasonable, and (3) its reliance on the Andersen Report’s statements of interest credits is reasonable.

III. Discussion

A. Oil Royalty Under-Collection: Plaintiff’s Reliance on the Koch Top 50 Lists as a Proxy for Historical Offered Prices

As reviewed above in Part I.B.1, royalty due to the Tribe under the 1974 Regulations “shall be based on the actual selling price, or the highest posted or offered price by a major purchaser in the Kansas-Oklahoma area whichever is higher on the day of sale or removal.” 25 C.F.R. § 183.11(a)(2) (1975) (emphasis added). The Joint Database, however, does not include historical offered prices data outside Osage County. Osage IV, 93 Fed. Cl. at 16. In fact, the Joint Database contains only those offered prices within Osage County that were actually received by the Osage Agency for sales. Reineke Rpt. 11; see id. at 5 (listing the information contained in the Joint Database); Martin Rpt. 8 (same). Further, defendant has never attempted to obtain offered price information from any of the sixteen major purchasers of oil in the Kansas-Oklahoma area. Tr. 568:21-569:10 (Mr. Martin); see id. at 563:14-17 (admitting on cross-examination that he has not “spent a penny attempting to obtain any offered prices for major purchasers outside Osage County”). Plaintiff subpoenaed Koch “to remedy the government[’s] failure as a fiduciary to keep proper records.” Osage IV, 93 Fed. Cl. at 16. Plaintiff asked Koch to determine the highest offered price for each day in the period from 1981 through 1990 on leases in Kansas or Oklahoma. Tr. 70:10-71:3 (colloquy between Mr. Klager and Mr. Godfrey (pl.’s attorney)).

Mr. Klager responded by providing plaintiff with lists--one for each day from January 1981 to December of 1990--of the fifty highest prices offered by Koch to oil

producers located in the Kansas-Oklahoma area.³¹ Tr. 66:1-6, 70:19-25 (Mr. Klager); Tr. 295:8-18 (Mr. Reineke). Each list consists of 50 leases, each of which is identified by a Koch seven-digit lease number and the price offered for 40- to 44.9-degree oil on each lease on that day. Tr. 66:1-3, 66:7-15 (Mr. Klager). Mr. Klager took “the lease pricing data for all the leases in Kansas and Oklahoma for a particular day, and sorted it in descending order by price and then ascending order by lease number, and then printed the first 50 that showed up in that sorted list.” Id. at 66:16-21. Approximately 99.6 percent of the highest prices on the Koch Top 50 Lists derive from leases outside of Osage County. Tr. 570:2-10 (colloquy between Mr. Martin and Mr. Godfrey (pl.’s counsel)).

Pursuant to the 1974 Regulations, Mr. Reineke determined the highest normalized price for each day during this time period by determining the highest value among (1) the highest price on the Top 50 Lists, (2) the Osage Agency’s highest posted price, and (3) the highest price in Osage County. See Tr. 298:5-299:10 (Mr. Reineke). Mr. Reineke then used the highest normalized price to estimate damages owed to the Tribe resulting from defendant’s oil-royalty under-collection breach. See id. at 300:12-301:5.

Mr. Martin, in his 2009 Report, stated that the Koch Top 50 Lists were not a reliable source of offered prices “due to numerous instances of contradictions.” Martin Rpt. ¶ 50. In his Supplemental Report--which is based on additional Koch data to which defendant gained access pursuant to the court’s Order of May 5, 2010,³² Martin Supp. Rpt. ¶ 6; see supra Part I.D (discussing May 5, 2010 Order providing defendant additional access to the Koch database)--Mr. Martin claims that many of the assumptions he made in his original expert report have been confirmed by the new data, Martin Supp. Rpt. ¶¶ 6, 15. However, Mr. Martin also acknowledges that “some of the prices in the Koch Top 50 Lists [are] acceptable as evidence of offered prices for purposes of the [1974] [R]egulations.” Def.’s Br. 11 (citing Tr. 443:22-429:1, 447:22-24, 448:9-15 (Mr. Martin)). Mr. Martin concludes, however, that \$4,404,111³³ of plaintiff’s \$5,449,085

³¹ Since the 1970s, Koch has maintained computerized records of Koch’s lease purchasing operations. Tr. 46:17-23 (Mr. Klager). Koch assigned each lease a price code, which represented a “particular pricing arrangement” for price per barrel of oil. Id. at 52:12-14. Each month, Koch used this and other data to determine the payments it owed at each particular lease. Id. at 57:5-59:8.

³² This new data includes: (1) a hard drive of Koch database information, including “3.5 million records from seven data tables and over 300 million records from Mr. Klager’s queries;” (2) “additional price code description and field definition tables;” and (3) an explanation by Mr. Klager of the Koch database. Martin Supp. Rpt. ¶¶ 6, 13.

³³ Defendant filed a notice of errata, explaining that the original calculation of \$4,050,003 in the Martin Supplemental Report should be replaced with \$4,404,111 because of an “inadvertent[]”

claim “is based on Koch prices that cannot be relied on as offered prices under the Osage [R]egulations.” Martin Supp. Rpt. ¶ 7; see id. ¶ 17 (calculating total impact of the Koch data to be \$5,449,085).

1. Defendant’s Challenges to the Koch Top 50 Lists as a Whole³⁴
 - a. Whether the Koch Data was Available to the Osage Agency Contemporaneously

Defendant argues that the court should not allow plaintiff to estimate damages based on “evidence that was not (and likely could not have been) available to the Osage Agency.” Def.’s Br. 3; id. at 26 (“To allow [p]laintiff to use this Koch data now . . . would be tantamount to requiring [d]efendant to be all-knowing and/or to serve as a guarantor, not just a trustee.”).

The court is dismayed by defendant’s attempt to absolve itself of the responsibility imposed upon it by binding regulations, including defendant’s refusal to acknowledge the possible propriety of the Koch data as a measure of historical offered prices. See Martin Supp. Rpt. ¶ 10 (“The [Osage] Agency would not have been able to obtain sufficiently documented data relative to leases outside of Osage County in order to issue demands to Osage lessees for additional royalties based on the existence of ‘offered prices.’”); see also Order of June 21, 2010 at 3 (advising defendant that “[t]estimony proffered to excuse noncompliance with [the 1974 Regulations]--[] regulation[s] binding on the United States--will be viewed by the court as in derogation of the court’s responsibility to determine and apply the law”).

It is undisputed that the government has failed even to attempt to obtain historical offered prices outside Osage County. Tr. 568:21-569:10 (Mr. Martin); see id. at 563:14-17 (admitting on cross-examination that he has not “spent a penny attempting to obtain any offered prices for major purchasers outside Osage County”). The Osage Tribe is entitled to the benefit of the 1974 Regulations. Defendant is flyspecking the only offered price data outside Osage County currently available to the parties and the court. The cause of justice would have been better served had defendant requested the court to subpoena the records of other major oil companies, and even better served if defendant had taken the necessary and appropriate steps to obtain offered prices when the 1974 Regulations were in effect.

error in the amount of \$5,892. Def.’s Notice of Errata to Supplemental Expert Report of Ronnie A. Martin, Dkt. No. 540, at 1.

³⁴ The topics addressed in Part III.A.1 follow plaintiff’s outline of defendant’s challenges to the Koch Top 50 Lists as a whole. See Pl. Osage Nation’s Post-Trial Resp. Br. (Pl.’s Resp. Br.), Dkt. No. 572, at 2-4.

The law of this case is that defendant breached its fiduciary duties as trustee and that “it would be inappropriate now to require plaintiff to resolve all possible doubts raised by the government about the facts and data that the trustee failed to collect and maintain in the form of trust records.” Osage IV, 93 Fed. Cl. at 16; see Osage II, 72 Fed. Cl. at 670-71 (holding that, in the absence of accurate historical royalty and trust records, “[t]he Osage Tribe is entitled to damages reasonably estimated based on existing information”); supra Part II (discussing Warm Springs). The court therefore disagrees with defendant’s argument that “[p]laintiff must prove that the Koch prices . . . would have likely been available to [d]efendant at a time and in a form that [d]efendant could have used to collect oil royalties from others.” Def.’s Br. 26; see also Def.’s Resp. Post-Trial Br. for Trial Beginning June 30, 2010 (Def.’s Resp. Br.), Dkt. No. 573, at 12 (arguing that because uncertainties exist within the Koch data, “it could not have been used by the Osage Agency to force others to pay royalties to [p]laintiff”). Nor is the court persuaded by defendant’s contention that “appropriate measures or procedures could not have detected the purported Koch offers at a time and in a manner in which they could have been used to demand oil royalty collections.” See Def.’s Br. 27. Indeed, it is readily imaginable that offered price data could have been obtained by defendant in a cooperative manner from the oil industry by using such means as confidentiality or privacy agreements to protect the industry from competitive harm.

b. Whether Plaintiff’s Reliance on the Koch Top 50 Lists Departs from the Court’s Tranche One Trial Damage Calculation Methodology

Defendant also argues that plaintiff has chosen to “unilaterally step away from the Tranche One trial damage calculation methodology and the Joint Data[b]ase created by the parties . . . to attempt to artificially augment its claimed damages by now relying on private data.”³⁵ Def.’s Br. 9 (internal quotations omitted). According to defendant, “[t]he Tranche One trial damage calculation methodology did not even begin to address the use of private data such as that now proffered by [p]laintiff.” Id. at 28. Defendant further argues that plaintiff’s reliance on the Koch data--and its rejection of MMS data, see supra Part I.B.1 (discussing MMS data)--equates to “picking and choosing data,” Def.’s Br. at 28 n.9 (internal quotations omitted).

³⁵ Defendant advances a similar argument in its discussion of buy-sell agreements and constant average prices. Def.’s Opening Post-Trial Br. for Trial Beginning June 30, 2010 (Def.’s Br.), Dkt. No. 569, at 20-21 (arguing that using a price associated with a buy-sell agreement would be inconsistent with “the Tranche One trial damage calculation methodology” (quoting Osage IV, 93 Fed. Cl. at 6)), 17 (arguing the same with respect to constant average price); Def.’s Resp. Br. 15 (buy-sell agreements), 16 (constant average price). The court addresses these more specific arguments below in Part III.A.2.b.i (buy-sell agreements) and Part III.A.2.b.ii (constant average price).

The court finds unpersuasive defendant's effort to reduce the damages it owes by blaming the party harmed by the government's failure to follow its own regulations. The Koch data is information of a type required by law to be used to determine royalties for the Osage Tribe, but that the government failed to collect. The 1974 Regulations specifically contemplate that the Osage Agency obtain "offered price[s] by a major purchaser in the Kansas-Oklahoma area." 25 C.F.R. § 183.11(a)(2). There were sixteen major purchasers operating in the Kansas-Oklahoma area from January 1981 to September 1990, Tr. 378:13-16 (Mr. Reineke); see Tr. 348:9-19 (colloquy between Mr. Reineke and Mr. Godfrey (pl.'s counsel)) (stating that "the timeframe in which the regulations call for the highest offered price in Kansas and Oklahoma" is January 1981 to September 1990), but defendant failed to collect any such data contemporaneously and fails and refuses to attempt to find such data now, see Pl. Osage Nation's Post-Trial Br. (Pl.'s Br.), Dkt. No. 570, at 2 (citing Tr. 568:21-569:10 (Mr. Martin)); Tr. 563:14-17 (Mr. Martin) (admitting on cross-examination that he has not "spent a penny attempting to obtain any offered prices for major purchasers outside Osage County.").

As plaintiff correctly points out, the "[c]ourt's Tranche One ruling was not confined to an endorsement of any particular set of data." Pl.'s Resp. Br. 5. The court simply accepted government records, which includes MMS data, "to be a satisfactory proxy" for historical offered price data from major purchasers in the Kansas-Oklahoma area "at this juncture." Osage II, 72 Fed. Cl. at 654 (emphasis added). Since the Tranche One trial, plaintiff has sought out the very data that the Osage Agency was required to collect under the 1974 Regulations. See Pl.'s Br. 2 ("It was the beneficiary, the Osage Nation, that sought and obtained the offered prices of a major purchaser . . ."). The court agrees with plaintiff that "[t]he Koch data is more nearly in accord[] with the [1974] [R]egulations . . . than the MMS data, which has only monthly average prices, not date of sale prices, and does not have the gravity of the oil sold." Pl.'s Resp. Br. 5; see also Tr. 295:2-7 (Mr. Reineke). Further--given that the Koch offered price data is always higher than the MMS offered price data, Tr. 380:24-25 (Mr. Reineke)--use of the MMS data is improper under the terms of the 1974 Regulations, which requires use of the "highest . . . offered price," see id. at 381:11-17. The court finds proper plaintiff's offer of the Koch data in evidence as support for its damages claim and finds that the use of the Koch data is consistent with "the application of the Tranche One trial damage calculation methodology to the broader Tranche One time periods." Osage IV, 93 Fed. Cl. at 6.

c. Whether the Top 50 Lists Have Been Adequately Validated to Allow Plaintiff to Rely on Them as the Highest Prices Offered by Koch

Defendant claims that, because the Koch Top 50 Lists have not been adequately validated, there is insufficient evidence to support plaintiff's reliance on them in calculating the damages plaintiff is due. Def.'s Br. 10. In support of this contention, defendant argues that the Koch Top 50 Lists do not actually represent prices offered by

Koch, Def.'s Br. 9, and that plaintiff and Mr. Reineke have "exhibited an inappropriate blind trust in Koch and its data,"³⁶ Def.'s Resp. Br. 8; see Def.'s Br. 10-12.

³⁶ Defendant also asserts that Koch and plaintiff withheld information necessary to validate the Koch Top 50 Lists. Def.'s Br. 9, 11-12; see Def.'s Resp. Br. 8 n.5 (arguing that defendant's review of the Koch data "has been exacerbated by [p]laintiff's and Koch's obstruction of [d]efendant's attempts to obtain data that would aid this review"), n.6 (alleging that Mr. Martin's analysis of the Koch data was "limited by [p]laintiff's and Koch's obstruction of [d]efendant's attempts to obtain more data"). Defendant refers to Mr. Martin's testimony indicating that his analysis of the Koch Top 50 Lists would have been aided by additional access to a variety of Koch tables, databases and documents, id. at 12; Tr. 448:22-451:8 (colloquy between Mr. Martin and Mr. Philpott (def.'s counsel)), which, defendant claims, "could have easily been provided to the parties," Def.'s Br. 10; see id. at 12. According to defendant, of particular importance is Koch's contract administration system (CAS) because that system likely contains "terms of any contracts or deals that Koch had entered into for the purchase of crude oil in Oklahoma and Kansas during the relevant period." Def.'s Br. 12; see Def.'s Resp. Br. 9 (characterizing the contracts themselves as the "best evidence" of Koch's offered prices). Defendant concludes that "[g]iven the absence of sufficient information for either party to make a determination as to whether the prices in the Koch Top 50 Lists were historical 'offered prices' . . . , [p]laintiff's efforts to use these prices to artificially augment its damages should be rejected in its entirety." Def.'s Br. 14; see id. at 9.

The court has already considered and ruled on this issue. See Order of May 5, 2010 at 1-2; see also Def.'s Statement Regarding the Disc. Period Prior to Trial, Dkt. No. 497, at 8-9 n.2, 16-19 (arguing that plaintiff has not complied with Rule 1006 of the Federal Rules of Evidence); Joint Notice of Compliance, Dkt. No. 499, at 1 (noting that the parties agreed to meet with Koch representatives on April 9, 2010 in an effort to resolve issues related to Rule 1006 of the Federal Rules of Evidence); Def.'s Further Mot. Regarding Koch Data, Dkt. No. 514, at 1-3, 12-17 (arguing that--in spite of the April 9, 2010 meeting--defendant has yet to have reasonable access to the Koch data); Pl. Osage Nation's Opp'n to Def.'s Further Mot. Regarding Koch Data, Dkt. No. 515, at 1 (arguing that the Federal Rules of Evidence had been satisfied "[b]ecause the electronic data reflected in the Koch [T]op 50 [L]ists was 'made available for examination' at a 'reasonable time' . . . and at a 'reasonable . . . place'" (quoting Fed. R. Evid. 1006)); Resp. of Koch Industries, Inc. and Vance Klager to Def.'s Further Mot. Regarding Koch Data, Dkt. No. 517-1, at 2-3 (explaining what transpired at the April 9, 2010 meeting and claiming that Koch has met the requirements of Fed. R. Evid. 1006). The court issued an Order on May 5, 2010--based upon briefings from Koch and the parties as well two TSCs held on May 4 and May 5, 2010--finding that "[Federal Rule of Evidence] 1006 requires defendant's access only to that data upon which Mr. Klager relied to develop the Koch Top 50 Lists." Order of May 5, 2010 at 2. Accordingly, the court granted defendant "access to the tables within the crude oil database that Mr. Klager drew from in developing the Koch Top 50 Lists and to the data fields included within these tables." Id. Further, the court finds credible Mr. Klager's testimony that the data he used (and the methods he employed) were the best means to provide plaintiff with the highest prices offered by Koch during the 1981 to 1990 time period. See Tr. 173:2-7 (Mr. Klager); id. at 173:12-174:6 (testifying that the crude database is a more accurate indicator of contract terms

Defendant claims that plaintiff is attempting to increase its estimate of under-collection damages by relying on a “decades[-]old database, [which] represent[s] a line of business long since abandoned by Koch, that demonstrably contains errors.” Def.’s Br. 9. Although defendant admits that the Koch data “may have been kept for certain business purposes,” defendant argues that the Koch data does not reflect the “offered prices” that plaintiff now seeks to rely upon. Id. Defendant accuses plaintiff of manipulating the Koch data to reveal offered prices from the Koch Top 50 Lists “solely for the purposes of this litigation.” Id. Defendant further contends that plaintiff and Mr. Reineke “simply took Mr. Klager’s lists of numbers at face value without any real further inquiry.” Id. at 24; see id. at 10 (claiming that Mr. Reineke merely sought “a conclusory list of [Koch’s] highest prices”). “[I]n stark contrast to the extremely limited efforts put forth by [p]laintiff,” defendant alleges that it “has spent considerable time and effort” in analyzing the Koch Top 50 Lists.³⁷ Def.’s Resp. Br. 8; see also Def.’s Br. 10-11; infra Part III.A.2.a (discussing Mr. Martin’s “outlier” analysis of the Koch Top 50 data).

Plaintiff counters that defendant “does not explain what it means by ‘validate,’ or how that fits with the standard of proof here.” Pl.’s Resp. Br. 4. According to plaintiff, Mr. Reineke knew that Koch had offered price data--which Koch relied upon to conduct its business--and he asked for and accepted the data that Koch, a neutral third party, provided. Pl.’s Resp. Br. 3. Plaintiff contends that Mr. Reineke’s “reliance on Mr. Klager is exactly what Mr. Martin and the United States lack: a willingness to accept the highly credible testimony of the only witness with any factual knowledge or experience with this data.” Pl.’s Resp. Br. 3; see Tr. 296:7-9 (Mr. Reineke) (testifying that he relied on Mr. Klager’s work “as being reasonable and reliable to generate this underpayment estimate for the time period in question”). Plaintiff states that the United States and Mr. Martin have “resort[ed] to nitpicking and taking baseless pot shots at perfectly valid

than the CAS); see also id. at 123:10-17 (stating his belief that the CAS was not in effect until the mid-1980s and his uncertainty as to whether oral contracts were represented in the CAS). Nothing developed at trial persuades the court that it should revisit this issue.

³⁷ Defendant’s repeated reference to Mr. Reineke’s more comprehensive analytic approach to the Joint Database, see Def.’s Resp. Br. 8 n.7 (stating that Mr. Reineke’s approach to the Joint Database “differs markedly” from the “extremely limited efforts” offered by Mr. Reineke with respect to the Koch data), has no persuasive value with respect to the issues now before the court. The Joint Database is not at issue here. Similarly, the court finds no merit in defendant’s assertion that “Mr. Reineke’s approach to the Koch Top 50 Lists is in stark contrast to the type of analysis [p]laintiff claims is necessary for the interest credits calculation for their investment underperformance claim.” See Def.’s Br. 11 n.2. The court adheres to the guidance of Warm Springs: “to the extent that the difficulty in determining the amount of loss suffered by the Tribes is attributable to improper accounting procedures followed by the [government as trustee], the consequences of those difficulties should not be visited upon the Tribes.” Warm Springs, 248 F.3d at 1375.

offered prices, just because these prices happen to generate significant damages.” Pl.’s Br. 2. Plaintiff maintains that defendant’s “bottomless spending” on its analysis of the Koch data “has only vindicated Mr. Reineke’s reliance on the Koch [T]op 50 [L]ists.” Pl.’s Resp. Br. 3; see Tr. 563:10-13 (Mr. Martin) (testifying that defendant has paid his company over \$1.3 million to analyze the Koch data); id. at 573:23-574:1 (testifying that he did not do an analysis to determine if the Koch Top 50 prices were too low).

Mr. Klager has been an employee of Koch for the past thirty years and is “familiar with Koch’s crude oil accounting systems, including the pricing of crude oil and payments to interest holders for crude oil purchases made from their leases.” Osage IV, 93 Fed. Cl. at 16 n.14 (internal quotations omitted); see also supra note 2 (describing Mr. Klager’s various positions at Koch). At trial, Mr. Klager described Koch’s computerized electronic accounting system, Tr. 45:16-49:3 (Mr. Klager), and testified to the importance of having correct prices within Koch’s accounting system because the prices affected “[m]oney going out the door,” id. at 47:25-48:10. In response to a question by Mr. Godfrey (plaintiff’s counsel) regarding the effect on Koch’s business of allowing prices “that were higher than what it was required to pay for oil . . . to remain in its accounting system,” Tr. 48:17-21 (Mr. Godfrey), Mr. Klager stated:

[W]e would have been overpaying for the crude oil. Our cost of good[s] sold would have been too high, and earlier I talked about how we make money. We buy low and sell high. We wouldn’t have made the right amount of money. . . . [H]aving the wrong price in the system is--it’s not good.

Tr. 48:22-49:3 (Mr. Klager). Mr. Klager also explained the process by which a purchase statement³⁸ is generated. Id. at 50:22-52:21, 56:22-59:8. In its generation of purchase statements, Koch employed price codes--which Mr. Klager describes as “a particular pricing arrangement” per barrel of oil for each effective date. Id. at 52:9-16. Each month, Koch looked up the price codes and handling bonuses or deductions for each lease from which it picked up oil to determine the payments owed to the interest owners of the oil.³⁹ Id. at 57:17-20, 59:6-8.

³⁸ Another name for a purchase statement is a run statement. Tr. 52:1-4 (colloquy between Mr. Klager and Mr. Godfrey (pl.’s counsel)). The purpose of purchase or run statements is “to summarize the transactions during a month for the producer.” Tr. 90:20-91:5 (Mr. Klager). The court refers to such statements as purchase statements in this Opinion.

³⁹ Mr. Klager also described the three approaches that Koch employed to enter pricing changes. Tr. 54:15-55:19 (Mr. Klager). The first approach, which applies to longer-term deals, was to change the pricing arrangement assigned to a price code, thereby changing the price of all leases associated with the price code on an effective date. Tr. 55:2-6 (colloquy between Mr. Klager and Mr. Godfrey (pl.’s counsel)); see Tr. 53:9-14 (Mr. Klager) (explaining that if a price code

To generate the Koch Top 50 Lists, Mr. Klager used four tables from Koch's crude database: the LeaseMaster Table, the PriceMaster Table, the LeasePrice Table and the LeaseHandling Table. Id. at 67:2-5; see id. at 67:16-22 (describing LeaseMaster Table); id. at 67:25-68:5 (describing PriceMaster Table); id. at 68:8-17 (describing LeasePrice Table); id. at 68:20-69:3 (describing LeaseHandling Table). Mr. Klager used these tables to obtain the price code data and lease price data to determine, lease by lease, for each day between 1981 and 1990, "what the 40-degree price was for that lease on that day," id. at 71:9-12; he then added any applicable handling deductions or bonuses to the 40-degree price, id. at 71:13-16. He sorted these prices in descending order and made a list of the top fifty entries for each day. Id. at 71:19-20, 66:16-21. Mr. Klager testified that "[i]f [Koch] were buying oil, that would have been the data we would have been using." Id. at 72:5-8.

Plaintiff has the burden of proving that the Koch data is reliable, and important to plaintiff's ability to demonstrate reliability is the credibility of Mr. Klager. The court finds Mr. Klager to be a well-informed and unbiased witness. The court agrees with plaintiff's contention that the "the Koch Top 50 Lists reflect Mr. Klager's knowledgeable compilation of reliable business records." See Pl.'s Br. 3. The preponderance of the credible evidence indicates that the Koch Top 50 Lists represent the highest prices actually offered by Koch for oil at the lease on the days in question.⁴⁰ Although Mr. Martin criticizes Mr. Reineke for "not attempt[ing] to do an in-depth quality assurance

represented a posted price, then the pricing arrangement associated with this price code would change each time the posting price changed). The second and third approaches apply to shorter-term deals, or those involving bonuses or deductions. See Tr. 53:15-54:14, 69:4-116 (colloquy between Mr. Klager and Mr. Godfrey (pl.'s counsel)). The second approach, which would affect individual leases, entailed "either pointing [the lease] to a different price code, or applying a bonus or a deduction at the lease level" in the LeaseHandling Table. Id. at 55:7-15, 69:7-11; see Tr. 54:9-14 (Mr. Klager). The third approach was to apply a deduction or a bonus that would modify the price associated with a particular lease. Tr. 55:16-19, 69:12-15 (colloquy between Mr. Klager and Mr. Godfrey (pl.'s counsel)); see Tr. 53:24-54:4 (Mr. Klager). Mr. Klager referred to this type of pricing arrangement as having the bonus or deduction "buried in the price code." Tr. 69:15-16 (Mr. Klager).

⁴⁰ The court finds confusing defendant's argument that the Koch Top 50 prices "should be rejected in [their] entirety," Def.'s Br. 14, given the testimony of defendant's expert, Mr. Martin, that he did not find the Koch Top 50 prices inherently suspect, Tr. 444:5-7 (colloquy between Mr. Martin and Mr. Philpott (def.'s counsel)); see Tr. 447:22-448:6 (Mr. Martin) ("[T]here is an awful lot . . . of Koch [T]op 50 data, that I am not objecting to anymore. So now I have narrowed it down to those portions of it that I still feel like it is not suitable to use . . ."); see also Def.'s Br. 10 (acknowledging that Mr. Martin testified that the Koch Top 50 Lists are not "inherently suspect"); Def.'s Br. 11 ("Mr. Martin was able to determine that some of the prices in the Koch Top 50 Lists were acceptable as evidence of offered prices for purposes of the Osage regulations.").

review of the data in the database,” Martin Supp. Rpt. ¶ 42, under Warm Springs, 248 F.3d at 1375, plaintiff does not bear the burden proposed by Mr. Martin.

Notwithstanding the overall reliability of the Koch data, the court recognizes that Koch was “involved in other aspects of the oil business that would not have been relevant under the [1974] [R]egulations.” See Def.’s Br. 11; see also Tr. 45:6-14 (Mr. Klager) (testifying that, in certain geographic areas, Koch used trucks to transport oil to central selling areas). The court agrees that the terms of certain transactions could affect whether a particular transaction price is an “offered price” within the meaning of the 1974 Regulations. See Def.’s Br. 12. The court also recognizes that the Koch Top 50 Lists may contain inaccuracies. The court will now consider whether the six subsets of data identified by Mr. Martin as “outliers”⁴¹ represent irrelevant or inaccurate data.

2. Defendant’s Specific Challenges to the Koch Top 50 Lists⁴²

In his review of the Koch Top 50 Lists, Mr. Martin “determined that certain portions of the data created underpayment values that were significantly out of the norm.” Martin Supp. Rpt. ¶ 16; see also Tr. 459:22-25 (Mr. Martin) (discussing identification of “outlier” data). Mr. Martin determined these “outliers” by, first, recreating Mr. Reineke’s model for calculating damages. Tr. 456:10-13 (Mr. Martin); see also id. at 456:18-23 (indicating that Mr. Martin came within \$7000 of Mr. Reineke’s \$34 million dollar calculation). He then ran this model with and without the Koch data. Id. at 457:5-6. Mr. Martin identified six “outliers,” “for which [he] believe[d] the Top 50 price does not provide a reasonable basis for estimating offered price.” Martin Supp. Rpt. ¶ 17; see Tr. 461:3-7 (Mr. Martin).⁴³ Mr. Martin then investigated the six “outliers” to determine

⁴¹ The court refers to these alleged anomalous prices as “outliers” without regard to whether Mr. Martin’s analysis qualifies as “formal statistical outlier analysis.” Def.’s Br. 15. The court addresses the appropriateness of Mr. Martin’s use of the term “outlier” below in Part III.A.2.a.

⁴² Defendant titles this section of its brief “Certain Portions of the Koch Top 50 Lists are Demonstrably Inaccurate or Unreliable as ‘Offered Prices.’” Def.’s Br. 14. The court addressed the reliability of the Koch Top 50 Lists above in Part III.A.1.c. The court views this portion of defendant’s criticism as directed to the Koch data’s accuracy and relevance under the 1974 Regulations. See id. at 9 (contending that “it is unknown . . . just how much of [p]laintiff’s claim is based on either erroneous or irrelevant data”).

⁴³ Mr. Martin identifies two additional “outlier” issues in his Supplemental Report--consolidated leases and inactive leases--that, he contends, do not represent the highest offered price on a particular day. Martin Supp. Rpt. ¶ 17. Accordingly, these issues do not affect plaintiff’s damages calculations. See Pl.’s Br. 3 n.1 (“Although Mr. Martin raises two other issues, ‘Consolidated Lease’ and ‘Inactive Date,’ he admits that neither affects damages, and therefore neither is discussed here.”). In his Supplemental Report, Mr. Martin contends that prices associated with these issues should be removed from the Top 50 Lists “in case the other highest

whether “they were the result of legitimate bonus payments or offers or were caused by data inaccuracies.”⁴⁴ Martin Supp. Rpt. ¶ 16; see also Tr. 459:22-460:7 (Mr. Martin) (discussing the purpose of identifying “outlier” data).

For each of these “outliers,” Mr. Martin recalculated the highest Top 50 price for each day. The recalculation “eliminate[ed] the incorrect high price and us[ed] the next highest Top 50 price as the proxy for offered price.” Martin Supp. Rpt. ¶ 17. Mr. Martin’s calculations reduce the damages calculated by Mr. Reineke by \$4,404,111. Id. The court first addresses the parties’ dispute regarding the analysis employed by Mr. Martin and then discusses the six “outliers” in more detail below.

Much of Mr. Martin’s analysis and defendant’s argument flows from a flawed reading of the 1974 Regulations. One important reason that the term “offered price” was incorporated into the 1974 Regulations was to “capture the value of any premiums or bonuses offered for crude oil over the highest posted price in the geographic area of reference.” Osage II, 72 Fed. Cl. at 638 (emphasis added); see id. at 639 (holding that the 1974 Regulations required royalty payments to be based on the higher of the actual selling price or the highest posted or offered price). The Joint Database contains offered prices only from leases within Osage County. Osage IV, 93 Fed. Cl. at 16. In contrast, approximately 99.6 percent of the highest offered prices on the Koch Top 50 Lists are

Top 50 prices are disqualified.” Martin Supp. Rpt. ¶¶ 32 (inactive leases), 34 (consolidated leases). However, neither plaintiff, see Pl.’s Br. 3 n.1, nor defendant, see Def.’s Br. passim, addresses these issues in their respective post-trial briefs. The court will not examine the issues further except for a brief reference in Part III.A.2.b.vi below, discussing inactive leases with respect to their relationship to the “inactive after last run date outlier.”

⁴⁴ Defendant appears to attribute to plaintiff the argument that the “outliers” identified by Mr. Martin are due to bonuses or premiums. See Def.’s Rep. 17 n.14 (“Mr. Reineke . . . appears to simply assume that these portions of the Koch data must include bonuses relevant under the regulations”); Def.’s Br. 18 (“[T]here is no basis to conclude or even assume that the use of [‘constant average prices’] was designed to represent a bonus or premium over a posted price.”). Defendant quotes Osage II for the proposition that “the term ‘offered price’ was introduced as a means of capturing the market value represented by bonus or premium payments that were offered to . . . producers by a major purchaser over the posted price.” Def.’s Br. 18 (quoting Osage II, 72 Fed. Cl. at 644). Plaintiff, however, refutes defendant’s argument “that it is necessary to prove that [a] price was intended to be a ‘bonus or premium . . . over posted price,’” Pl.’s Resp. Br. 11 (quoting Def.’s Br. 18), arguing, instead, that “[t]here is a ‘bonus or premium’ whenever an offered price is higher than a posted price. It is irrelevant . . . how the ‘offered price’ is determined,” id. (emphasis in original). The court agrees that defendant misconstrues the role of bonuses or premiums with respect to offered prices. Neither the 1974 Regulations nor the court’s characterization of offered prices in Osage II requires proof that prices were “designed to represent a bonus or premium over a posted price,” Def.’s Br. 18, in order for that price to be used to measure “highest . . . offered price,” 25 C.F.R. § 183.11(a)(2) (1975).

from leases within the entire Kansas-Oklahoma area (excluding Osage County). Tr. 570:2-10 (colloquy between Mr. Martin and Mr. Godfrey (pl.'s counsel)). It is reasonable to expect that any additional offered price information would increase the amount of damages owed to the Tribe.⁴⁵ See Tr. 316:11-23 (Mr. Reineke). The court rejects defendant's contention that the prices in the Koch Top 50 Lists are invalid as a measure of damages because plaintiff "has introduced no evidence that any differences between [Joint Database] prices and other pricing data represents in any way some sort of 'bonus or premium payment[.]'." Def.'s Resp. Br. 15 (regarding buy-sell agreements); id. at 16 (regarding constant average prices). Plaintiff has no obligation under the 1974 Regulations to provide such evidence. See supra note 44 (explaining that the 1974 Regulations do not require proof that offered prices were designed to represent a bonus or premium over a posted price). Nor do the 1974 Regulations require that a transaction be consummated at an offered price in order for that offered price to set the standard for the Tribe's royalties.

The court agrees with plaintiff's contention that the Koch data most likely understates the historical highest offered prices relevant to the determination of damages under the 1974 Regulations. "Because Koch is only one of the 16 major purchasers whose offered prices were required to be used in determining the royalties owed to the Osage Nation, the Koch lists are at best a significant understatement of that figure." Pl.'s Resp. Br. 2; see Pl.'s Br. 7 ("[B]ecause Mr. Martin did not attempt to obtain any other

⁴⁵ The parties also dispute whether "[offered] prices outside Osage County were consistently higher than inside [Osage County]." Pl.'s Br. 2; Osage Nation's Opening Br. Regarding Revised Tr. (Pl.'s Br. Rev.), Dkt. No. 581, at 2; Def.'s Supplemental Post-Trial Br. for Trial Beginning June 30, 2010 (Def.'s Supp. Br.), Dkt. No. 580, at 6-7; Osage Nation's Resp. Br. Regarding Revised Tr. (Pl.'s Resp. Rev.), Dkt. No. 583, at 2; Def.'s Resp. Supplemental Post-Trial Br. for Trial Beginning June 30, 2010 (Def.'s Resp. Supp. Br.), Dkt. No. 582, at 3-4; see also Osage Nation's Reply Brief in Support of its Mot. to Strike, Dkt. No. 594, at 1; Def.'s Resp. to Mot. to Strike (Def.'s Resp. Strike), Dkt. No. 591, at 1. At trial, Mr. Reineke testified to as much, claiming that the publication of the Osage Agency's highest posted price (HPP) letter effectively served as a disincentive for oil purchasers "to compete with each other [on price]." Tr. 315:6-18 (colloquy between Mr. Reineke and Mr. Godfrey (pl.'s counsel)); see Pl.'s Br. Rev. 2; Pl.'s Resp. Rev. 1-2.

Mr. Reineke's testimony that the HPP letter suppressed prices and defendant's extensive attack on that testimony are both irrelevant to the court's conclusion. That is, it is reasonable to expect that any additional offered price information would increase the amount of damages owed to the Tribe under the language of the 1974 Regulations. It is reasonable to expect that offered prices for the entire Kansas-Oklahoma area--specifically, prices such as those shown on the Koch Top 50 Lists--would more likely than not be higher than the offered prices within Osage County--those represented by the Joint Database. (And, if the offered prices of all major purchasers of oil in the Kansas- Oklahoma area were known, it is likely that many of those prices would exceed the prices in the Koch Top 50 Lists).

major purchaser's data outside Osage County, he cannot in any event tell whether any of the prices he is challenging were met or exceeded by some other major purchaser on the day in question."); Osage Nation's Opening Br. Regarding Revised Tr. (Pl.'s Br. Rev.), Dkt. No. 581, at 2 ("[Defendant] ignore[s] the elephant in the middle of the room—the missing data from 15 major purchasers over a ten-year period, data neither the Osage Agency, nor the United States, nor Mr. Martin ever even attempted to collect.").

a. Mr. Martin's "Outlier" Analysis, Generally

According to defendant, Mr. Martin first employed an "outlier" analysis--which entailed running Mr. Reineke's model with and without the Koch data--to identify "specific time periods where the prices from Koch Top 50 Lists were significantly higher than the prices from the Joint Data[b]ase." Def.'s Br. 15; see Def.'s Resp. Br. 11 ("Mr. Martin . . . used his 'outlier' analysis merely as a starting point to help focus his review of the Koch data."). Defendant states that Mr. Martin's second step was to "look behind" these potential anomalies to "determine whether the prices in the Koch Top 50 Lists appeared accurate, or whether there might be an error or problem with the data." Def.'s Br. 15; Tr. 444:22-445:2 (Mr. Martin). According to defendant, this two-pronged approach enabled Mr. Martin "to identify several issues and associated instances where reliance on certain portions of the Koch Top 50 Lists was unreasonable and unwarranted." Def.'s Br. 15; see id. at 11 ("Mr. Martin's analysis demonstrated that some of the prices in the Koch Top 50 Lists . . . do not accurately set forth historical 'offered prices' for purposes of the [1974] [R]egulations.").

Plaintiff, however, characterizes Mr. Martin's approach as an "advocacy attempt[] to reduce damages" rather than a mathematical or statistical analysis, and, as such, "should be given no weight." Pl.'s Br. 7. Plaintiff explains that Mr. Martin's approach is "to identify periods where damages based on the Koch data were particularly high, and then to attempt to find an explanation for why the prices generating those damages should be disallowed" because Mr. Martin "equates the term 'outlier' with any price generating high damages outside Osage County."⁴⁶ Id. at 6 (citing Tr. 368:14-21, 383:7-11 (Mr. Reineke)).

⁴⁶ Defendant criticizes "[p]laintiff's continued attempt to recharacterize damages calculated with and without the Koch data as damages 'outside' and 'inside Osage County.'" Def.'s Resp. Br. 18 n.15; Def.'s Br. 25 n.7; see Pl.'s Br. 6 (referring to the highest prices in the Koch Top 50 Lists as "damages outside Osage County" and the highest prices in the Joint Database as "damages inside Osage County" (emphasis omitted)); Tr. 388:18-20 (Mr. Reineke) (testifying that he believed Mr. Martin "tried to compare inside Osage County to outside Osage County"). The court simply does not understand why this characterization should be criticized.

Plaintiff's characterization underscores defendant's failure to follow its own regulations by calculating royalties on the basis of "highest posted or offered prices by a major purchaser in

Defendant contends that plaintiff's argument regarding the methods employed by Mr. Martin is a "semantic quibble over the term 'outlier,'" Def.'s Resp. Br. 10, for the reason that Mr. Martin's "outlier" analysis was used "merely as a starting point to help focus his review of the Koch data," *id.* at 11; *see* Def.'s Br. 15 ("Plaintiff's efforts to characterize Mr. Martin's outlier analysis as unsystematic or inconsistent with what Mr. Reineke may consider a formal statistical outlier analysis are simply irrelevant, because his charting of possible anomalies was simply the first step in his analysis.").

In its most general sense, an outlier is defined as "[a]n observation that appears to deviate markedly from the other members of the sample in which it occurs." B.S. Everitt, The Cambridge Dictionary of Statistics 274 (2d ed. 2002); *accord* Graham Upton & Ian Cook, A Dictionary of Statistics 286 (2d ed. rev. 2008) (defining outlier as "[a]n observation that is very different to other observations in a set of data").⁴⁷ As Mr. Reineke testified, "an outlier analysis is actually taking a set of data representing . . . the same measurement[] and comparing the data within that measurement and comparing the differential between the mean and the data point in order to calculate some standard deviation and some outlier issues." Tr. 359:24-360:4 (Mr. Reineke). Mr. Reineke also

the Kansas-Oklahoma area." 25 C.F.R. § 183.11(a)(2) (1975). The Joint Database consists of, inter alia, "posted prices from major purchasers, the 'highest posted price letter' published by the Osage Agency, and prices received by the Osage Agency for sales occurring on the Reservation." Reineke Rpt. 10; *see id.* at 5 (listing the information contained in the Joint Database); Martin Rpt. 8 (same). Of course, as defendant states, the Osage Agency's highest posted price letter "encompassed the highest posted prices in the entire Kansas-Oklahoma area, not just in Osage County." Def.'s Br. 25 n.7; *see Osage II*, 72 Fed. Cl. at 648 (citing trial transcript "confirming that the highest posted price determination was based on prices posted by major purchasers anywhere in the Kansas-Oklahoma area"). However, the Joint Database lacks all offered price data outside of Osage County and, in addition, offered prices within Osage County that did not result in sales. *Osage IV*, 93 Fed. Cl. at 16. By contrast, approximately 99.6 percent of the highest prices on the Koch Top 50 Lists derive from leases outside of Osage County. Tr. 570:2-10 (colloquy between Mr. Martin and Mr. Godfrey (pl.'s counsel)). It is not unreasonable, as a shorthand expression, to refer to the highest prices within the Joint Database as "damages inside Osage County" and to refer to the highest prices in the Koch Top 50 Lists as "damages outside Osage County."

⁴⁷ The court notified the parties of its consultation of B.S. Everitt, The Cambridge Dictionary of Statistics (2d ed. 2002), Graham Upton & Ian Cook, A Dictionary of Statistics (2d ed. rev. 2008), and The Int'l Statistical Inst., The Oxford Dictionary of Statistical Terms (Yadolah Dodge ed., 6th ed. 2003), *see infra* notes 48-49 (discussing these sources) in its Order of Sept. 21, 2010, Dkt. No. 585; *see also* Order of Sept. 29, 2010, Dkt. No. 587 (clarifying its Order of Sept. 21, 2010); Order of Sept. 30, 2010, Dkt. No. 588 (providing the parties with additional information); Order of Dec. 9, 2010 at 4 (holding that the court's judicial notice of these texts "is consistent with Rule 201 of the Federal Rules of Evidence . . . and satisfies considerations of fairness and due process"); *supra* note 20 (discussing court's use of judicial notice in this Opinion).

testified that calculation of a mean and a standard deviation is necessary in an outlier analysis in order to exclude data, citing “[a]ccept[ed] statistical practices.”⁴⁸ See Tr. 368:18-23 (Mr. Reineke). According to A Dictionary of Statistics 286, “[v]arious indicators are used to identify outliers. One is that an observation has a value that is more than 2.5 standard deviations from the mean.”⁴⁹

On cross-examination, Mr. Martin admitted that his use of the term “outlier” does not suggest that he conducted “any kind of statistical or mathematical analysis.” Tr. 570:11-14 (colloquy between Mr. Martin and Mr. Godfrey (pl.’s counsel)). Further, Mr. Martin referred to the graphical representation of his “outlier” analysis, DX 2710, as a “differential chart” that “simply measures the difference between the value calculated from the [T]op 50, and the value that was calculated by using the data for Tranche [One] from the [J]oint [D]atabase.” Tr. 466:25-467:4 (Mr. Martin).

Given that Mr. Martin did not employ any kind of formal statistical analysis, defendant’s contention that the six “outliers” identified by Mr. Martin “pointedly place[] at issue the reasonableness of using certain specific portions of the Koch data” to estimate the damages plaintiff is due, Def.’s Resp. Br. 10, is without foundation. Further weakening the persuasiveness of Mr. Martin’s “outlier” analysis is the fact that it is directed entirely to aspects of the Koch data that support a larger recovery for plaintiff than the recovery afforded by the Joint Database.

⁴⁸ As examples of accepted statistical practices, both the transcript and the electronic digital recording (EDR) of the trial indicate that Mr. Reineke refers to the “Grooms” statistical method and the “EDS” statistical method. Tr. 368:23-369:4 (Mr. Reineke); July 1, 2010 EDR 9:38:56-9:39:00. With respect to Mr. Reineke’s reference to the “Grooms method,” the court understands Mr. Reineke to be referring to the Grubbs’ Test. Compare Tr. 320:9-11 (Mr. Reineke) (referring to “the Grubb’s method”), with June 30, 2010 EDR 6:40:08-6:40:10 (referring to a method that, in the recording, sounds like “Groom’s method”). The Grubbs’ Test is a statistical method used to identify outliers when the data falls within a normal distribution. A Dictionary of Statistics 287; see also The Oxford Dictionary of Statistical Terms 175 (defining the “Grubbs’ rule” as “[a] criterion for the rejection of outlying large observations”). With respect to Mr. Reineke’s reference to the “EDS method,” the court understands Mr. Reineke to be referring to the ESD (Extreme Studentized (or Extreme Standardized) Deviate) Test. The ESD Test is a method of “detecting multiple outliers in a sample.” The Cambridge Dictionary of Statistics 232 (emphasis omitted); see also The Oxford Dictionary of Statistical Terms 143 (providing ESD equation).

⁴⁹ Standard deviation is defined as “[t]he square root of the variance,” A Dictionary of Statistics 370, and variance is defined as “[a] measure of the variability of a set of data,” id. at 401. The mean of a set of data, according to Mr. Reineke, is “calculated . . . by taking the average of all the data.” Tr. 364:24-365:3 (Mr. Reineke).

Plaintiff also contends that two of the more pronounced spikes in the graphical representation of Mr. Martin's "outlier" analysis reflect not outliers or anomalies in the Koch data but, instead, periods of "hot market" activity. Pl.'s Resp. Br. 6; Tr. 389:4-9 (Mr. Reineke); see DX 2710 (def.'s "outlier" graph) and PX 1617 (pl.'s "outlier" graph)⁵⁰ (delineating two large spikes in damages during the time periods of approximately July 1982 to October 1983 and April 1990 to July 1990); DX 2711 (data used to graph DX 2710 and PX 1617). Mr. Reineke testified that competition for oil was particularly fierce during a "boom time" in the early 1980s and during the first Gulf war in the early 1990s,⁵¹ Tr. 389:10-15, 390:23-391:4 (colloquy between Mr. Reineke and Mr. Kim (def.'s counsel)), and that the increased competition for oil caused oil purchasers "to be more aggressive and pay bonuses and pay higher prices," Tr. 391:4-6 (Mr. Reineke); see also id. at 319:3-18.

⁵⁰ The graphical representation of Mr. Martin's "outlier" analysis was submitted as Exhibit F-1 to the Martin Supplemental Report. DX 2710 (def.'s "outlier" graph); see Tr. 463:12-468:18 (Mr. Martin); Tr. 600:8-603:11 (Mr. Reineke). DX 2710 shows a single graphed line, which depicts several spikes, representing the highest prices in the Koch Top 50 Lists, with the zero line (or x-axis) representing the highest prices within the Joint Database. DX 2710 (def.'s "outlier" graph); see DX 2711 (data used to graph DX 2710); Tr. 466:17-468:4 (Mr. Martin) (explaining DX 2710). During his rebuttal testimony, Mr. Reineke presented the court with PX 1617, a graph that depicted two lines--both of which depicted several spikes--one representing the highest prices from both the Koch Top 50 Lists and the Joint Database and the other representing prices within only the Joint Database. Pl.'s Br. 6; Joint Filing Pursuant to Order Dated July 6, 2010 (Jt. Filing), Dkt. No. 564, at 4 (PX 1617) (pl.'s "outlier" graph); Tr. 600:24-601:3 (Mr. Reineke); see also Order of July 6, 2010, Dkt. No. 562, at 1 (ordering the parties to "confer and, if possible, agree on graphical representations of (1) the damages derived from the [J]oint [D]atabase and (2) the damages derived from both the [J]oint [D]atabase and the Koch Top 50 [L]ists"); Jt. Filing 1. The court understands DX 2710 to represent the difference between the two lines graphed in PX 1617. See Def.'s Resp. Br. 17 n.14 (addressing the "delta" or difference between the two lines in PX 1617); Tr. 466:25-467:4 (Mr. Martin) (stating that DX 2710 is a "differential chart" that "simply measures the difference between the value calculated from the [T]op 50, and the value that was calculated by using the data for Tranche [One] from the [J]oint [D]atabase"). Plaintiff contends that "it is only the artificial flattening of damages inside Osage County to the zero line in Mr. Martin's [graph] that allows him to create spikes." Pl.'s Resp. Br. 5-6.

⁵¹ The 1974 Regulations were in effect to September 12, 1990. See 25 C.F.R. § 183.11(a)(2) (1975); Leasing of Osage Reservation Lands for Oil and Gas Mining, 55 Fed. Reg. 33,112 (Aug. 14, 1990) (amending the 1974 Regulations). Testimony and evidence addressing subsequent time periods is not relevant. See Def.'s Resp. Br. 18 (claiming that the "outliers" identified by Mr. Martin ceased to exist after July 1, 1990) (citing DX 2711).

Defendant contends that Mr. Reineke's "hot market" theory should be afforded no weight because there is no evidence in the record to support this theory.⁵² See Def.'s Br. 25. Defendant also criticizes Mr. Reineke's theory on the ground that "there is no reason why such economic forces would not have also impacted posted prices." Id.; see Def.'s Resp. Br. 17 ("Nor does [p]laintiff have any evidence that any such 'boom' time led to any particular or significant bonus or premium payments, as opposed to simply increasing the value of crude oil by raising the posted prices (and thus led to any particular or significant disparity between posted and offered prices)."); see also Daigle Dep., July 15, 2010, Dkt. No. 568-1, at 61:21-23 (testifying that posted prices "were very reflective of market prices"). Defendant argues that the "outliers" Mr. Martin identifies are not the result of any bonus or premium payments but instead are the result of irrelevant or inaccurate data. See Def.'s Br. 25-26; supra note 42 (characterizing defendant's reliability argument in terms of the relevancy of the Koch Top 50 Lists under the 1974 Regulations); infra Part III.A.2.b (discussing Mr. Martin's "outlier" characterization as "outliers" resulting from irrelevant data and "outliers" resulting from inaccurate data); see also supra note 44 (finding that the 1974 Regulations do not require proof that offered prices were "designed to represent a bonus or premium over a posted price"); supra note 45 and accompanying text.

The parties have not constructed a persuasive history of the economics of the 1981-1990 time period as it affected oil prices and, after its review of the evidence, the court remains uncertain as to whether the two more pronounced spikes in DX 2710 and PX 1617 reflect periods of "hot market" activity. However, as discussed in more detail below, see infra Part III.A.2.b.i.b) (holding that the 1974 Regulations do not contain a market price requirement), the court finds this issue irrelevant.⁵³ The 1974 Regulations

⁵² Defendant also contends that Mr. Reineke failed to convey this opinion prior to trial. Def.'s Br. 25. However, plaintiff contends that Mr. Reineke disclosed this "hot market" theory in his deposition before trial. Pl.'s Resp. Br. 6. On December 3, 2010 the court ordered plaintiff "to file the portions of Mr. Reineke's deposition that discuss his 'hot market' or 'boom time' theory." Order of Dec. 3, 2010, Dkt. No. 596, at 1. Defendant subsequently filed its Motion for Leave to File a Supplemental Brief in Response to [the] Order Dated December 3, 2010 (Def.'s Mot. to File Supp. Br.), Dkt. No. 598. Defendant voiced its concern "that the [c]ourt's Order demonstrates that it is considering [p]laintiff's apparent argument that a party's failure to properly disclose its expert's opinion in a . . . Rule 26(a)(2) report may be cured through deposition testimony offered on the eve of trial." Def.'s Mot. to File Supp. Br. 2. The court resolved this issue in its Order Denying Motion, filed just prior to this Opinion, holding that plaintiff's failure to disclose Mr. Reineke's "hot market" theory (as well as plaintiff's failure to supplement Mr. Reineke's Supplemental Expert Report) is irrelevant to the court's consideration of the issues before it.

⁵³ Even if this argument were legally relevant, which it is not, the evidence does not weigh in defendant's favor. Defendant's argument that a competitive market should have impacted the posted prices represented in the Joint Database, see Def.'s Br. 25, is--in fact--consistent with the

required only that the prices be “offered.” The preponderance of the credible and relevant evidence indicates that the Koch Top 50 Lists represent the highest prices actually offered by Koch for oil at the lease on the day in question. See supra Part III.A.1.c. The court now analyzes whether the six “outliers” identified by Mr. Martin represent irrelevant or inaccurate prices.

b. Mr. Martin’s Six “Outliers”

data graphed in PX 1617. See PX 1617; see also Pl.’s Br. 6 (contending that PX 1617 “reveal[s] that the spikes in damages outside Osage County identified by Mr. Martin occurred at times when damages inside Osage County also spiked”) (emphasis in original). The two lines depicted in PX 1617--the line representing underpayment from the Koch Top 50 Lists and the Joint Database and the line representing underpayment from just the Joint Database--appear to track each other to a striking degree, especially in the early 1980s. PX 1617; see also Tr. 601:23-602:7 (Mr. Reineke) (stating that PX 1617 indicates that “when the damage component was high off of Mr. Martin’s chart, it was also high using only the [J]oint [D]atabase”). A lesser degree of correlation exists between the two lines in the early 1990s. PX 1617; see also Daigle Dep. 27:5-6; 27:21-28:8 (indicating that both oil prices and bonus payments increased during the Gulf War).

Two of defendant’s own witnesses, Mr. Daigle and Mr. Charles Hurlburt, further contradict defendant’s position. See Osage II, 72 Fed. Cl. at 635 n.8 (identifying Mr. Hurlburt as a witness for defendant, stating that he worked “as a supervisory petroleum engineer at the Osage Agency, a position he has held since April 1989”). During his deposition, Mr. Daigle testified that the first Gulf War caused oil market prices to fluctuate greatly, see Daigle Dep. 23:16-23, and agreed, that at the start of the war, “there would have been . . . a higher premium or bonus paid for crude oil at the lease than there had been in previous periods,” id. at 26:17-28:8; see id. at 27:5-6 (stating that he could “testify accurately that the prices spiked” during the beginning of the first Gulf War). During the Tranche One trial, the following colloquy occurred on direct examination of Mr. Hurlburt:

Mr. Burton (defendant’s counsel): To the best of your recollection when did companies start offering bonuses?

Mr. Hurlburt: [The Osage Agency] began seeing a great deal of competition in . . . about 1988, ’89, ’90 After the calamitous price fall in ’86 and ’87 prices kind of edged back up slowly. We saw companies that would provide extra service. We saw companies that just wanted to just pay extra for the oil.

2006 Tr. 1056:17-1057:2 (colloquy between Mr. Hurlburt and Mr. Burton (def.’s counsel)); Order of Sept. 21, 2010 (notifying the parties of its intended use of Mr. Hurlburt’s testimony); Order of Sept. 29, 2010 (clarifying its Order of Sept. 21, 2010); Order of Dec. 9, 2010 at 4 (finding that the court’s judicial notice of this prior testimony “is consistent with Rule 201 of the Federal Rules of Evidence . . . and satisfies considerations of fairness and due process”); supra note 20 (discussing court’s use of judicial notice in this Opinion).

Based on Mr. Martin's report and testimony, defendant characterizes the six "outliers" as falling into two broad categories: "outliers" resulting from data irrelevant under the 1974 Regulations, see Def.'s Resp. Br. 13-16, and "outliers" resulting from inaccurate data, see id. at 11-13. "Outliers" resulting from irrelevant data include leases associated with "buy-sell agreements." See Def.'s Br. at 20-23; Def.'s Resp. Br. 13-16. "Outliers" resulting from inaccurate data include "Permian discontinued prices," "inconsistent price codes," "price code modification," and prices "inactive after last run date." See Def.'s Br. 15-16 (Permian discontinued prices), 18-19 (inconsistent price code), 19-20 (price code modification), 23-24 (prices inactive after last run date). Defendant appears to argue that outliers associated with constant prices that were averaged over time ("constant average price") exhibit both defects. Def.'s Br. 17-18; Def.'s Resp. Br. 16.⁵⁴

Neither Mr. Klager nor Mr. Reineke agrees with any of Mr. Martin's criticisms regarding Koch's allegedly inaccurate data. Tr. 93:21-94:3 (Mr. Klager) (testifying that he would not change anything in his generation of the Koch Top 50 Lists in response to the Martin Supplemental Report)⁵⁵; Tr. 321:7-9, 322:20-22 (Mr. Reineke) (price code modification), 322:23-24, 323:15-18 (prices inactive after last run date), 323:19-20, 328:6-9 (prices inactive after last run date), 328:10-11, 329:2-5 (Permian discontinued prices), 329:6, 330:1-3 (inconsistent price code). Defendant claims that Mr. Klager's statement that he would not change anything in his generation of the Koch Top 50 Lists "is of [no] great consequence." Def.'s Resp. Br. 9. The court disagrees.

Mr. Klager was asked to identify the highest prices offered by Koch at leases within Oklahoma and Kansas, limited by the time period at issue. See Tr. 70:19-71:3 (colloquy between Mr. Klager and Mr. Godfrey (pl.'s counsel)); Def.'s Resp. Br. 9.⁵⁶

⁵⁴ To the extent that defendant argues that certain prices in the Koch Top 50 Lists are "outliers" because they do not comport with the application of "the Tranche One trial damage calculation methodology," see Def.'s Br. at 20-21 (quoting Osage IV, 93 Fed. Cl. at 6) (buy-sell agreements); Def.'s Resp. Br. 16 (constant average prices), the court will address these arguments below. See infra Parts III.A.2.b.i (discussing buy-sell agreements) and III.A.2.b.ii (discussing constant average prices); see also supra Part III.A.1.b (discussing the court's Tranche One trial damages calculation methodology).

⁵⁵ Mr. Klager did, however, state that he would have excluded consolidated leases from the Koch Top 50 Lists. Tr. 93:25-94:1 (Mr. Klager). However, neither plaintiff nor defendant addresses the issue of consolidated leases in their respective post trial briefs because the issue does not affect plaintiff's damages, see supra note 43, and the court does not examine the issue further.

⁵⁶ As discussed above in note 36, the court finds credible Mr. Klager's testimony that the crude database--and not CAS--was the best source of this data. Tr. 173:2-24 (Mr. Klager).

The court recognizes that this task is distinct from the issue presented at trial: whether the Koch Top 50 Lists can be relied upon as reasonably reliable, accurate and relevant historical offered prices under the 1974 Regulations. See Def.'s Resp. Br. 10 (framing the issue as “whether plaintiff may rely on price information generated by Koch’ to calculate oil royalty under-collection damages” (quoting Osage IV, 93 Fed. Cl. at 40)). In this case, the court has been greatly assisted by the testimony of Mr. Klager, a neutral third party who has been an employee of Koch for nearly thirty years.

Mr. Klager candidly noted that “[i]t would be hard to imagine a database . . . that didn’t have errors.” Tr. 158:24-159:1 (Mr. Klager). Mr. Klager’s testimony that the Koch database “is bound [to contain] quite a few errors” “given the amount of data that is in there and the human interface that had to take place,” Tr. 159:6-9 (Mr. Klager); see Def.’s Resp. Br. 10-11, does not, however, undermine the overall reliability of the Koch data. Koch was a major oil purchaser in the Kansas-Oklahoma area. See Tr. 378:7-16 (colloquy between Mr. Reineke and Mr. Kim (def.’s counsel)). As Mr. Klager testified, Koch had a strong business interest in keeping accurate records. See Tr. 174:3-6 (Mr. Klager) (testifying that “money went out the door based on what was in our crude database” and that “[i]t was very important that we get those right”); id. at 47:25-48:10 (testifying that it was “very important” to ensure to that its prices in its computerized accounting system were correct as it pertains to “[m]oney going out the door”);⁵⁷ Pl.’s Br. 5 (“Koch made money by buying low and selling high, so it was very important that Koch oil prices be correct in the computerized accounting system.” (citations omitted)).

⁵⁷ Defendant claims that Mr. Klager “effectively admitted that . . . errors may be even more likely if Koch’s data does not correspond to an actual transaction.” Def.’s Resp. Br. 12 (citing Tr. 174:3-6 (Mr. Klager)). According to defendant,

given that Koch’s error correction process is tightly tied to the occurrence of actual transactions that affect its bottom line, where there have been no transactions associated with portions of the data, those specific portions of the data do not affect whether Koch would have “made the right amount of money” and Mr. Klager’s testimony thus provided no rebuttal to Mr. Martin’s specific allegations of error.

Def.’s Resp. Br. 12-13; see Tr. 160:22-164:5 (colloquy between Mr. Klager and Mr. Kim (def.’s counsel)) (agreeing that “if there was an error in Koch’s database, but there was no transaction” “[i]t wouldn’t have been money going out the door[,] [s]o . . . it wouldn’t have an effect on [Koch]”). Defendant’s argument is not dispositive. It is difficult to imagine a database without error. See Tr. 158:24-159 (Mr. Klager). Further, the court does not find that Mr. Klager’s confidence in the Koch data that was associated with “money going out the door,” id. at 48:4-10, 174:3-6, requires a corresponding distrust of the Koch data not associated with such transactions, see Tr. 160:22-161:14 (colloquy between Mr. Klager and Mr. Kim (def.’s counsel)) (offering examples as to how Koch could identify errors in its database without an associated payment going out the door).

Defendant attempts to burden plaintiff with the task of resolving all uncertainties and all evidentiary disputes relative to the Koch data. In particular, defendant argues that plaintiff's "apparent acknowledgment" of possible deficiencies in Koch's database "does not help them prove their case." Def.'s Resp. Br. 11 (citing Pl.'s Br. 10 (discussing inconsistent price code and Permian price code issues), 10-11 (discussing constant average price issue)); see Def.'s Br. 24 (claiming that "Mr. Reineke even tended to agree with the substance of some of Mr. Martin's critiques"). Defendant argues that "[p]laintiff may not profit from [a] lack of data," Def.'s Resp. Br. 12 n.9, and that any deficiencies in the Koch data should not be held against defendant, see Def.'s Resp. Br. 12 ("Nor can this lack of information be held against [d]efendant--[p]laintiff cannot even argue that the further data necessary to resolve these uncertainties and thus enforce royalty demands are necessary 'missing' 'trust records' . . ."); see also id. at 12 n.9 (arguing that the foregoing point also "resolves what to do with that portion of the Koch data where Mr. Martin did not have enough information to offer any opinion its reliability").

The court disagrees with the foregoing contentions in defendant's briefing. Defendant is looking at the Koch data through the wrong end of the analytical telescope. Defendant is a trustee who has defaulted in its obligation to an Indian tribe. This is not a case of some third party "profiting from a lack of data." This is a case of a dependent trust beneficiary who has been shortchanged by the failure of the United States to follow its own binding regulations. Defendant, as a trustee in breach, "cannot leave the task to [plaintiff] and then be given the benefit of any doubt. Hence the rule of Warm Springs" Osage IV, 93 Fed. Cl. at 17 (quotation omitted); see also Osage II, 72 Fed. Cl. at 670-71 (holding that in the absence of accurate historical royalty and trust records, "[t]he Osage Tribe is entitled to damages reasonably estimated based on existing information"). The government left entirely to plaintiff the task of filling in the offered price gap in the Joint Database, which plaintiff has accomplished in significant part by obtaining the Koch data. The government's attempts to flyspeck the Koch data do not cause the court to question its overall reliability or accuracy.

i. Buy-Sell Agreements

Defendant contends that two of the largest peaks depicted in DX 2710--from July 1982 through August 1982 and from February 1983⁵⁸ through October 1983, Martin Supp. Rpt. ¶ 24; DX 2710 (def.'s "outlier" graph); DX 2711 (data used to graph DX

⁵⁸ The Martin Supplemental Report states that the second peak of "outliers" occurs from February 1982 through October 1983. Martin Supp. Rpt. ¶ 24. Examination of DX 2710 (graph of alleged "outliers") and DX 2711 (data used in constructing the graph) indicates that the second peak in fact occurs from February 1983 through October 1983. DX 2710 (def.'s "outlier" graph); DX 2711 (data used to graph DX 2710).

2710)--are associated with leases that represent buy-sell agreements,⁵⁹ see Martin Supp. Rpt. ¶ 24; Tr. 479:6-25 (Mr. Martin); Def.'s Br. 20. Buy-sell agreements are agreements in which one party has a transportation advantage (specifically trucks and oil pipelines), but another party (the first purchaser) has the right to purchase the oil from the oil producer. Tr. 86:6-11 (Mr. Klager). The party with the transportation advantage agrees to buy oil from the first purchaser and to sell back to the first purchaser a like volume at another location. Id. at 86:12-22. According to defendant, the "8 to 29" leases that represent buy-sell agreements "represent only 0.2% of all of Koch's Oklahoma and Kansas leases, yet account for approximately one-half of the impact of [p]laintiff's use of the Koch Top 50 Lists." Def.'s Resp. Br. 13-14; Tr. 482:23-483:19 (Mr. Martin) (stating that there were an average of twenty-one leases at issue, varying from eight to twenty-nine leases over time); see DX 2729 (pie charts depicting the impact of these leases). Specifically, Mr. Martin testified that these leases account for approximately forty-nine percent, or \$2.6 million, of Mr. Reineke's \$5,449,085 total damages calculation with respect to the period covered by the 1974 Regulations. Tr. 483:3-6, 483:16-19 (Mr. Martin); Def.'s Br. 20. Defendant claims that this damages impact, in addition to the fact that the prices associated with leases "exceed all other prices by an average of \$1.97" for the eleven months at issue, "is evidence of the fact that [these] prices are not representative of the market prices Koch is paying for oil in Oklahoma and Kansas." Def.'s Resp. Br. 14. The 1974 Regulations, however, do not contain the term "market

⁵⁹ Mr. Daigle described exchange and buy-sell agreements to the court. See Tr. 495:25-496:4, 496:21-498:6 (colloquy between Mr. Daigle and Mr. Philpott (def.'s counsel)). According to Mr. Daigle, in pure exchange agreements, no money changes hands. Tr. 497:9-11 (Mr. Daigle). For example, in pure exchanges, TIPCO delivers to Koch fifty thousand barrels of oil and, two months later, Koch delivers to TIPCO fifty thousand barrels of oil with no payment made for either delivery. Id. at 497:1-9. Mr. Daigle testified that, in the late 1970s, TIPCO was no longer willing to engage in exchanges because of the high dollar value of the oil. Id. at 497:12-16. Instead, TIPCO transitioned to buy-sell agreements where, for example, TIPCO would deliver and sell oil to Koch at one location and TIPCO would later buy oil from Koch at another location. Id. at 497:19-498:6.

During trial, the parties and witnesses referred to exchange and/or buy-sell agreements as if they were interchangeable. See, e.g., Tr. 555:15-17 (Mr. Martin) ("I think the exchange agreements and the buy/sell agreement are just methods to transport oil . . ."); Tr. 535:1-4, 9-10 (colloquy between Mr. Daigle and Mr. Godfrey (pl.'s counsel)) (Mr. Daigle: "And by exchange [agreements], do you mean buy/sell [agreements] also?" Mr. Godfrey: "Yes."); see also Def.'s Br. 20 (referring to "exchange or buy-sell agreement[s]"); Def.'s Resp. Br. 14 (stating that BB-01 "was solely associated with exchange (or similar) transactions"). Mr. Klager testified that, although he does not use the terms exchange or buy-sell agreements "in the most proper sense," he does not distinguish between them from a lease purchasing perspective. Tr. 182:17-183:2 (Mr. Klager). The court refers to the agreements entered into between Koch and TIPCO in the 1980s as buy-sell agreements. See Tr. 497:1-498:6 (Mr. Daigle) (explaining that, by the late 1970s, TIPCO transitioned from the use of exchange agreements to buy-sell agreements).

prices,” but provide instead that the Tribe is entitled to royalties based on the “highest posted or offered price in the Kansas-Oklahoma area made by a major purchaser.” 25 C.F.R. § 183.11(a)(2) (1975); see infra Part III.A.2.b.i.b) (discussing defendant’s “market price” argument).

Mr. Martin makes several contentions about evidence in which he finds indications that the leases at issue represent buy-sell agreements. First, Mr. Martin contends that the leases for which he could find corresponding purchase statements “at some point in time or another had the designation of exchange on them.” Tr. 479:18-21 (Mr. Martin); see Tr. 481:23-482:9 (colloquy between Mr. Martin and Mr. Philpott (def.’s counsel)); see also DX 2718-0002-0013 (twelve Koch purchase statements containing the word “EXCHANGE” in the lower left corner); Tr. 481:23-482:9 (Mr. Martin) (discussing DX 2718). Mr. Martin also states that each of these leases designates TIPCO as first purchaser. Tr. 479:8-9, 479:16-25 (colloquy between Mr. Martin and Mr. Philpott (def.’s counsel)); Tr. 495:5-9, 495:15-21 (colloquy between Mr. Daigle and Mr. Philpott (def.’s counsel)); DX 2718 (several Koch purchase statements that contain “TIPCO 1ST PURCHASER”); see also Martin Supp. Rpt. 10 n.8 (“[TIPCO] generally has no transportation systems in Oklahoma and uses other companies’ facilities to transport and exchange TIPCO’s crude oil. TIPCO is usually a first purchaser of crude oil at the lease . . .”).

Mr. Martin also relies on the observation that some of the TIPCO leases list BB-01 as their price code as an indication of a buy-sell agreement. Martin Supp. Rpt. ¶ 24; Tr. 479:16-18 (Mr. Martin); see also DX 2718 (several Koch purchase statements that appear to identify BB-01 as the price code); PX 1609 (screen shot of Koch’s PriceMaster Table) (indicating that the BB-01 price code was in effect from April 1, 1981 to November 1, 1983); Tr. 598:23-599:4, 609:17-20 (colloquy between Mr. Reineke and Mr. Godfrey (pl.’s counsel)) (explaining PX 1609). As plaintiff observes, however, “there is no evidence about how the particular prices for BB-01 were calculated, and only a small sample of purchase statements with the price code were located.” See Pl.’s Br. 11 n.3 (internal citations omitted). Plaintiff’s exhibit PX 1609 and related witness testimony provide further information about the BB-01 price code. PX 1609 is a screen shot of Koch’s PriceMaster Table, which contains the prices associated with BB-01 from April 1, 1981 to November 1, 1983. PX 1609 (PriceMaster Table screenshot); Tr. 598:23-599:4, 609:17-20 (colloquy between Mr. Reineke and Mr. Godfrey (pl.’s counsel)). The price changes “four or five times over this time period”—ranging from \$38 to \$32 per barrel—“and then finally gets zeroed out . . . indicating it’s no longer in effect” by November 1, 1983. Tr. 599:5-9 (Mr. Reineke); see PX 1609 (PriceMaster Table screenshot); Tr. 82:12-14 (Mr. Klager). For the two time periods at issue, July 1982 through August 1982 and February 1983 through October 1983, Martin Supp. Rpt. ¶ 24; DX 2710 (def.’s “outlier” graph); DX 2711 (data used to graph DX 2710); see supra note 58 (discussing accuracy of the dates in the Martin Supp. Rpt.), the prices associated with BB-01 were \$35 per barrel and \$32 per barrel, respectively, PX 1609 (PriceMaster Table screenshot).

During trial, Mr. Daigle, the former CEO of TIPCO, Tr. 490:2-6 (Mr. Daigle), described a typical buy-sell agreement entered into by TIPCO. According to Mr. Daigle, Texas International Petroleum Corporation (Texas International)⁶⁰--the oil producing sister company of TIPCO, Tr. 490:17-20, 491:8-15 (Mr. Daigle)--had oil-producing wells in Oklahoma, *id.* at 498:16-23; *see supra* note 2 (explaining Mr. Daigle's relationship with TIPCO); *see also* Daigle Dep. 21:11-19 (discussing TIPCO). Because TIPCO did not have any trucks in Oklahoma, it would negotiate with a purchaser that had oil-gathering assets in Oklahoma, such as Koch, to pick up oil at the lease. Tr. 498:24-499:2, 499:13-21 (Mr. Daigle). Texas International would sell the oil to TIPCO, which would then sell the oil to a purchaser, at an agreed-upon price, in exchange for the purchaser's agreement to sell the oil back to TIPCO at another location. *Id.* at 499:18-22; Tr. 500:6-14 (colloquy between Mr. Daigle and Mr. Philpott (def.'s counsel)). According to Mr. Daigle, TIPCO entered into many buy-sell agreements with Koch during the early 1980s. Tr. 494:17-20, 495:18-496:2 (colloquy between Mr. Daigle and Mr. Philpott (def.'s counsel)); *see supra* note 59 (providing Mr. Daigle's explanation of exchange and buy-sell agreements).

Defendant argues that prices associated with buy-sell agreements should be excluded from the Koch Top 50 Lists because they do not represent historical offered prices that are relevant under the 1974 Regulations. *See* Def.'s Br. 21-23; Tr. 555:8-15 (colloquy between Mr. Martin and Mr. Philpott (def.'s counsel)). The court understands defendant to be making two broad challenges to plaintiff's use of the prices associated with the TIPCO leases. First, defendant claims that TIPCO-Koch agreements amount to "little more than transportation agreements," Def.'s Br. 21; *see* Tr. 555:15-17 (Mr. Martin), and therefore reflect "nominal" prices that do not "fall within the ordinarily understood meaning of the term 'offered price,'" ⁶¹ Def.'s Resp. Br. 15 (quoting *Osage II*,

⁶⁰ Both defendant and Mr. Daigle refer--apparently interchangeably--to Texas International Petroleum Company, *see, e.g.*, Tr. 490:17-18, 507:17 (Mr. Daigle), Tr. 491:3-4, 491:6-7 (Mr. Philpott (def.'s counsel)) and to Texas International Petroleum Corporation, *see, e.g.*, Tr. 507:24 (Mr. Daigle); *see also* DX 2717-0002 (chart referencing "Texas International Petroleum Corporation").

⁶¹ To the extent that defendant argues that "the use of any exchange or similar agreements is inconsistent with 'the application of the Tranche One trial damage calculation methodology,'" Def.'s Resp. Br. 14 (quoting *Osage IV*, 93 Fed. Cl. at 6)), the court has already ruled on this issue. In *Osage IV* the court held that "prices offered or paid by companies involved in exchanges or reselling such as Koch" were valid and that "[t]he 1974 Regulations required only that the price be 'offered,' and did not specify by whom." *Osage IV*, 93 Fed. Cl. at 17. The court agrees with defendant's statement that "the Tranche One trial did not involve in any way any exchange or similar agreements." Def.'s Resp. Br. 15; *see also supra* Part III.A.1.b (discussing the Tranche One trial damage calculation methodology). The reason that the Tranche One trial did not involve any exchanges or similar agreements is the failure of the *Osage*

72 Fed. Cl. at 643-44) (internal quotation marks omitted). Second, defendant argues that the price assigned to BB-01 does not represent the “market price” for oil. Def.’s Br. 21; Def.’s Resp. Br. 15. The court addresses these arguments below.

a) Whether the TIPCO-Koch Agreements Reflect “Nominal” Prices That Do Not Meet the Definition of “Offered Price”

One aspect of defendant’s argument is that, when acting as parties to a buy-sell agreement, Koch and TIPCO engaged in “net-out” arrangements.⁶² Def.’s Resp. Br. 14; Def.’s Br. 22. In a net-out arrangement, the two parties engaging in purchases and sales determine the net amount of money owed to one of the parties, and one check is sent for the net amount, “instead of both parties sending large checks to each other.” Tr. 189:10-17 (Mr. Klager); see id. at 191:5-9 (“So instead of two parties exchanging \$5 million, they decide together they’re going to see what the net of the two is, and only one or the [other] is going to exchange the funds. It’s just an efficiency thing.”); accord Daigle Dep. 37:6-10 (agreeing with the proposition that, in net-out agreements, “instead of each company forwarding large sums of money back and forth, it is agreed that only the net difference be wire transferred once a month”). Plaintiff does not appear to contest defendant’s assertion that the buy-sell agreements between TIPCO and Koch involved net-out arrangements. See Pl.’s Br. 14 (noting that defendant attempts “to place significance on the existence of a ‘net-out’ arrangement”); id. (citing Mr. Daigle’s testimony that net-out agreements were common in the industry).

Mr. Daigle testified that TIPCO began to employ net-out arrangements in its buy-sell agreements after the late 1970s. See Daigle Dep. at 51:11-16 (explaining that industry employed net-out arrangements after transitioning to buy-sell agreements); id. at 36:20-37:4 (agreeing that oil companies began to use both formal and informal net-out agreements); see also supra note 59 (discussing TIPCO’s transition from pure exchange agreements to buy-sell agreements in the late 1970s); DX 2716-0030-0031 (buy-sell agreement between Koch and Texaco Trading and Transportation, Inc. containing “Payment subject to net out arrangement” in its Special Provisions section).

Agency to obtain the prices it was required to collect under the 1974 Regulations. The use of exchange or buy-sell agreements does not conflict with the court’s “application of the Tranche One trial damage calculation methodology.” See Osage IV, 93 Fed. Cl. at 6. There is no reason why the prices offered in exchange or buy-sell agreements should not be regarded as offered prices when they evidence offered prices for oil.

⁶² Mr. Daigle and Mr. Godfrey (plaintiff’s counsel) also refer to net-out arrangements or agreements as net payments or net payment agreements. See, e.g., Daigle Dep. 37:6, 37:17, 37:24. Mr. Daigle characterized the terms as interchangeable. See id. at 52:1-2. For consistency, the court employs the terms net-out arrangements and net-out agreements.

The court understands defendant to be arguing that the net-out arrangements in the TIPCO-Koch buy-sell agreements involved only “nominal” transportation differential prices rather than actual purchase transactions. See Def.’s Resp. Br. 14-15 (“[B]ecause this price code was solely associated with exchange (or similar) transactions, . . . there are no associated purchase transactions”); Def.’s Br. 22 (“Mr. Reineke simply assumes that payments were actually made under these exchange agreements, but there is no basis for such an assumption.” (internal citations omitted)). Defendant cites to testimony by Mr. Martin in which he opined: “I don’t believe [buy-sell] agreements are real purchase agreement[s]. I think . . . buy/sell agreement[s] are just methods to transport oil, and I think that the prices that you see that are associated with them . . . are just simply prices that are agreed on by the parties for whatever degree of risk or other reasons that they have.” Def.’s Br. 21 (quoting Tr. 555:14-22 (Mr. Martin)). According to defendant, the TIPCO-Koch buy-sell agreements at issue “simply involve nominal prices that in no way affect whether Koch would have made the right amount of money or even involve money . . . out the door.” Def.’s Resp. Br. 14 (internal quotations omitted); see also id. (citing Pl.’s Br. 11, for the proposition that “oil is contractually required to be resold for the same price plus a differential” in TIPCO-Koch buy-sell agreements).⁶³ Defendant concludes that “[a] nominal price that was not in fact actually offered to be paid, but instead was designed not to be paid because it nets out (but may serve some other as-yet not-well-defined different accounting purpose), cannot be said to fall within the ordinarily understood meaning of the term ‘offered price.’”⁶⁴ Def.’s Resp. Br. 15 (citing Osage II, 72 Fed. Cl. at 643-44) (internal quotation marks omitted) (emphasis in original).

Defendant claims that Mr. Klager “had no idea” whether payments other than transportation fees were actually made under the TIPCO-Koch agreements. Def.’s Br. 22. The evidence is otherwise. On cross-examination, the following exchange took place:

Mr. Kim (defendant’s counsel): But with the net out arrangement, Koch wasn’t actually paying any money. Is that right?

⁶³ Defendant also claims that plaintiff’s Brief acknowledges how “‘common’ Koch’s ‘net-out’ arrangements were,” which, according to defendant, means “that Koch would pay nothing and only receive payments for the ‘differential.’” Def.’s Resp. Br. 14. The court does not infer from plaintiff’s reference to the prevalence of net-out arrangements in the oil industry, see Pl.’s Br. 14, that plaintiff “acknowledge[s] . . . that Koch would pay nothing and only receive payments for the ‘differential,’” as contended by defendant, see Def.’s Resp. Br. 14.

⁶⁴ Defendant’s single assertion that “these nominal prices were at times unrelated to ‘market value,’” Def.’s Resp. Br. 15, appears to be a more specific characterization of defendant’s “market price” argument, which the court addresses below in Part.III.A.2.b.i.b).

Mr. Klager: Yes. We would have been paying for the lease purchase. They would have been paying us for the sale.

Mr. Kim: If they're paying, are you talking about an accounting ledger sense? There would be a credit on one side and a debit on the other side.

Mr. Klager: Yes. We would have booked a cost that had sold for the purchase of the crude oil, yes, and we would have then booked a sale on the other side. Okay. And that's in our ledge[r].

Mr. Kim: But if by payment we mean checks or money going out the door, is there any reason to believe that a check was cut or money went out the door in a buy-sell contract that has a net out arrangement?

Mr. Klager: . . . If we're making a lease purchase, yes, we generated [a] check. If we had over this whole deal we had a net out arrangement, though, somebody in our accounting group would have intercepted that check and canceled it, okay?

Mr. Kim: So a check would be cut, but money wouldn't go out the door?

Mr. Klager: It wouldn't go out the door, at least not to that owner. It would have went out the door, though, through this net out arrangement. So instead of two parties exchanging \$5 million, . . . only one or the [other] is going to exchange the funds. It's just an efficiency thing.

Mr. Kim: I understand. And which party would you expect to be receiving funds in a net out arrangement?

Mr. Klager: Oh I don't know. It depends on the balance of volumes and values. I don't know.

Tr. 190:4-191:13 (colloquy between Mr. Klager and Mr. Kim (def.'s counsel)); see also id. at 183:24-184:8 (stating that when Koch "take[s] oil from somebody, [Koch] pay[s] them for it").

Defendant further claims that "[i]n apparent standard terms and conditions attached to Koch's contracts, . . . Koch disclaims any need for payments to be made for anything other than the transportation fees." Def.'s Br. 22. Defendant also asserts that, "even if there was any imbalance that required a payment for any oil, Koch disclaims that any such payments need to be made using the price terms contained in the exchange agreements." Id. While defendant cites to DX 2732--which consists of 67 pages of "various sample Koch agreements," Tr. 193:17-20 (Mr. Kim)--for the propositions

contained in its brief, Def.'s Br. 22, defendant appears to be referring specifically to DX 2732-0021, DX 2732-0023, and DX 2732-0025.⁶⁵ These three documents, which are identical to each other, contain "General Provisions," one of which is entitled "EXCHANGES" and contains the following statement:

Except for differentials, if any are set forth on the reverse side of this agreement, and other adjustments set forth in this agreement, this exchange shall be on a barrel for barrel basis.

. . .

In the event an exchange imbalance arises as a result of this agreement as a result of one party delivering prior to or more than the other party, subsequent deliveries shall be applied first to such exchange imbalance and then to any further delivery obligations, consistent with the pricing and delivery terms of this agreement set forth above.

DX 2732-0021,-0023,-0025.

Defendant argues that its understanding of the "standard terms and conditions attached to Koch's contracts" is "entirely consistent with the testimony [p]laintiff obtained from Mr. Daigle." Def.'s Br. 22-23. Defendant then cites various pages of Daigle's deposition transcript, leaving entirely to the court the task of determining which portion of Mr. Daigle's testimony, if any, support defendant's argument. *Id.* at 23 (citing Daigle Dep. 5-6, 28-32, 35-37, 51-52). The court fails to see the significance of the portions of the Daigle deposition transcript that defendant claims are "entirely consistent" with its view that "Koch disclaims any need for payments to be made for anything other than the transportation fees." *See id.* at 22-23.

⁶⁵ During trial, Mr. Kim (defendant's counsel) attempted to elicit testimony from both Mr. Klager and Mr. Reineke indicating that DX 2732-0021, DX 2732-0023, and DX 2732-0025 represent the standard reverse side of a Koch contract. *See* Tr. 197:11-21 (colloquy between Mr. Klager and Mr. Kim) (stating that DX 2732-0021 appears to be the reverse side of a Koch oil contract); Tr. 429:8-17 (colloquy between Mr. Reineke and Mr. Kim) ("I assume they are [the back page of Koch's contracts] if you say they are."); *see also* Def.'s Br. 22 (claiming that the "apparent standard terms and conditions attached to Koch's contracts . . . appear to be attached regardless of whether such contracts were for exchanges or standard purchases"). Although neither witness confirmed this characterization with certainty, the court finds this characterization reasonable. *See* DX 2732-0021,-0023,-0025 (identical pages entitled "GENERAL PROVISIONS," with the following language introducing the provision labeled "EXCHANGES": "If these General Provisions apply to an exchange or a matching purchase and sale arrangement . . .").

For example, in testimony appearing on pages of five and six of the Daigle Deposition, Mr. Daigle sought to correct prior testimony he had given plaintiff during a telephone deposition (a deposition that the court does not have before it). Daigle Dep. 5:7-6:6. During that telephone deposition, Mr. Daigle had apparently indicated that Koch had made payments to Phoenix Resources based upon a purchase statement that was then before him. *Id.* at 5:8-13. Mr. Daigle attempted to correct this statement, testifying that “since there was a contract between TIPCO . . . with Phoenix Resources, who then sold it to Koch, that [purchase] statement . . . is either a memo [purchase] statement or an information statement, and Koch did not make any of those payments to Phoenix Resources nor did it to TIPCO.” *Id.* at 5:13-19. This testimony does not persuade the court that the TIPCO-Koch agreements had “no associated purchase transactions.” *See* Def.’s Resp. Br. 14. Nor is the court persuaded by Mr. Daigle’s testimony regarding the small profit margin of TIPCO.⁶⁶ Daigle Dep. 28:19-25; *see id.* at 29:21-30:12 (stating that although companies structured like TIPCO have small profit margins, he does not “have a good complete basis to know what Koch’s profit structure was”).

Moreover, the court finds that the remaining portions of the Daigle deposition transcript that defendant cites in fact weaken defendant’s “nominal price” argument. *See* Def.’s Resp. Br. 14; Def.’s Br. 23; Daigle Dep. 31-32, 35-37, 51-52; *see also* Pl.’s Br. 14 (citing Daigle Dep. 32:11-13, 36:20-38:4, and 51:8-23 as rebuttal to defendant’s net-out arrangement argument). Mr. Daigle acknowledged that, when TIPCO engaged in pure exchanges, it was “sometimes the case that the only money that change[d] hands [was] the differential between the buy transaction and the sell transaction.” Daigle Dep. 51:8-12 (colloquy between Mr. Daigle and Mr. Godfrey (pl.’s counsel)). Mr. Daigle further agreed that, because pure exchange agreements did not have price terms for oil, the oil industry began using buy-sell agreements in the late 1970s because “there was a price for the buy and a price for the sell.” *Id.* at 31:6-32:5; *see* Tr. 497:9-16 (Mr. Daigle) (stating that, during the late 1970s, TIPCO moved from pure exchange agreements to buy-sell agreements “because of the tremendous amount of cash that was involved”); Tr. 497:22-498:2 (Mr. Daigle) (stating that TIPCO “would actually sell the oil” in buy-sell agreements); Daigle Dep. 51:13-15 (“When we got to buy/sell agreements, we would invoice for the oil that we sold on a buy/sell at the pricing terms in that agreement . . .”); *see also* Martin Supp. Rpt. ¶ 25 (“It was necessary for receipt and delivery prices to be

⁶⁶ Defendant argues that “if [p]laintiff is correct that Koch’s oil business was a ‘small margin business’ with ‘a reasonable estimate of [its] profit margin [at] one quarter [of one] percent,’ Daigle [Dep. 28:19-30:12], it would be wholly unreasonable to assume that Koch was shattering its profit margin for the small subset of its business associated with price code BB01.” Def.’s Br. 23 n.5. The court does not find this argument applicable to defendant’s net-out arrangement theory; rather, the court finds that this argument addresses whether the price assigned to the BB-01 price code represents a negotiated “market price.” *See infra* Part III.A.2.b.vi.b) (discussing the price assigned to BB-01).

included in [buy-sell] agreements for cash flow reasons and to establish a value of the crude oil in the pipeline should losses occur . . .”).

Mr. Daigle explained that TIPCO employed net-out agreements after it transitioned to the use of buy-sell agreements. See Daigle Dep. 51:11-16; see also id. at 36:20-37:4 (agreeing that oil companies began to use both formal and informal net-out agreements). Mr. Daigle agreed that net-out agreements “are not used exclusively for buy/sell agreements” and that the purpose of such agreements is “to limit the risk of nonpayment.” Daigle Dep. 37:11-23 (colloquy between Mr. Daigle and Mr. Godfrey (pl.’s counsel)). Moreover, Mr. Daigle agreed that the parties to a net-out agreement wire transfer the difference once a month “instead of each company forwarding large sums of money back and forth.” Id. at 37:6-10; see id. at 52:3-6 (agreeing that, in net-out agreements, “sometimes only one of the two parties to that agreement would actually be cutting a check to the other side”). Further weakening defendant’s argument, Mr. Daigle acknowledged that “literally trillions of dollars have passed hands under the terms of net[-out] agreements.” Id. at 38:1-4.

The court is not persuaded that a “nominal” price (rather than an actual purchase-transaction-related price) must be assumed when there is a net-out arrangement within a TIPCO-Koch buy-sell agreement. The court recognizes that one of the agreed-to prices in the TIPCO-Koch buy-sell agreements was a “transportation differential,” which served to compensate Koch “for their trucking costs, their terminal costs, their storage costs, [and] their profit to handling,” Tr. 500:15-19 (Mr. Daigle), and that this price was added to the price at which Koch sold the oil back to TIPCO, Tr. 333:19-25, 334:12-15 (Mr. Reineke); Tr. 426:12-17 (colloquy between Mr. Reineke and Mr. Kim (def.’s counsel)); see id. at 420:23-421:4 (agreeing that if TIPCO offered Koch \$32 for oil as a part of a buy-sell agreement, then TIPCO is “contractually obligated to re-purchase that oil from Koch at \$32 plus the transportation differential price” (emphasis added)). The weight of the evidence indicates that Koch bought the oil at the lease, picked it up at the lease, and then resold the oil to TIPCO for the same price plus the transportation differential.

It is the price at which Koch bought the oil at the lease that is represented in the Koch Top 50 Lists, and the court finds that this price falls within the meaning of the term “offered price” in the 1974 Regulations. The court finds persuasive and credible Mr. Klager’s testimony that net-out arrangements simply offered Koch and TIPCO a more efficient means to buy and sell oil. Tr. 191:5-9 (Mr. Klager); see also id. at 190:6-8 (“We would have been paying for the lease purchase. They would have been paying us for the sale.”). Even if Koch’s purchase of oil from TIPCO at the lease simply resulted in a debit in Koch’s accounting ledger, see id. at 190:12-13 (Mr. Klager) (stating that Koch “would have booked a cost that had sold for the purchase of the crude oil” in its accounting ledger), the court concludes that the presence of a net-out arrangement in a TIPCO-Koch buy-sell agreement does not invalidate Koch’s purchase of oil at lease, see id. at 87:2-6 (Mr. Klager) (testifying that Koch obtains title to the oil as it leaves the tank and enters

Koch's trucks); DX 2716-0030 (Koch document titled "BUY-SELL CONTRACT" stating, inter alia, "Title shall pass from Seller to Buyer as the crude oil enters the designated facilities.").

- b) Whether the 1974 Offered Price Regulations Required a Negotiated "Market Price"

Defendant also argues that the price associated with the BB-01 price code was not a negotiated "market price" and therefore not an offered price under the 1974 Regulations. See Def.'s Br. 21 (claiming that the price Koch paid TIPCO was a flat price, not a "negotiated, market price for the sale of oil"). Defendant appears to limit this argument to eight months, from March 1983 through October 1983, when the price associated with BB-01 was \$32.⁶⁷ See Def.'s Br. 21 ("While initially, in January 1983, the flat price of \$32 reflected the contemporaneous market value, it did not by March 1983, as it was a flat price that stayed constant for periods of time and did not change with the postings." (emphasis added)); PX 1609 (list of prices associated with BB-01 and the dates they were in effect). Defendant primarily relies on the testimony of Mr. Daigle, who explained that by March of 1983, \$32.00 was "a flat price that stayed and didn't change with the postings." Tr. 508:20-23 (Mr. Daigle); see Tr. 506:23-507:9 (colloquy between Mr. Daigle and Mr. Philpott (def.'s counsel)) (explaining the meaning of a flat price).⁶⁸

⁶⁷ The court understands defendant's argument to be premised on Mr. Daigle's testimony that the \$32.00 price Koch paid TIPCO "was a market price in January of 1983. But by March, April and May[,] it was no longer a market price." Tr. 508:18-20 (Mr. Daigle) (emphasis added); accord Def.'s Br. 21. Plaintiff contends "that until January 1983, the flat price of \$32 reflected the contemporaneous market value of oil in the buy-sell. Therefore, the United States has already conceded that Mr. Martin's challenge to BB-01 prices up to and including that time is erroneous." Pl.'s Resp. Br. 12-13 (internal quotation omitted). Plaintiff's argument appears to the court to be misdirected. The time periods at issue are those that Mr. Martin claims are affected by "outlier" prices associated with buy-sell agreements: July through August of 1982, when the price associated with the BB-01 price code was \$35, and February through October 1983, when the price associated with the BB-01 price code was \$32. Martin Supp. Rpt. ¶ 24; PX 1609; supra Part III.A.2.b.vi (discussing PX 1609); DX 2711; DX 2710; see supra note 58 (discussing accuracy of the dates in the Martin Supplemental Report). The court understands that defendant is excluding from its negotiated "market price" analysis July through August of 1982 (when the price associated with BB-01 was \$35) and February of 1983.

⁶⁸ According to plaintiff, "Mr. Martin originally argued that the [\$30.01] price supposedly paid by TIPCO to the producer is the only price that can be used as an offered price." Pl.'s Br. 14; see also DX 2717-0002 (chart entitled TIPCO Exchange Agreement with Koch) (indicating that TIPCO purchased oil from Texas International at a price of \$30.01 and that Koch purchased this oil from TIPCO at a price of \$32.00); DX 2717-0003 (May 1983 Koch-TIPCO agreement the chart purports to represent); Tr. 85:21-89-4 (Mr. Klager) (discussing chart); Tr. 505:5-507:24

(Mr. Daigle) (same). Plaintiff contends that this argument “is wrong as a matter of law, because Koch’s price paid would still qualify under the regulation as an offered price.” Pl.’s Br. 14 (citing Osage IV, 93 Fed. Cl. at 17 (“[P]rices offered or paid by companies involved in exchanges or reselling such as Koch were equally valid. The 1974 Regulations required only that the price be ‘offered,’ and did not specify by whom.”)). Plaintiff also states in briefing that TIPCO was a wholly-owned subsidiary of Texas International, id. (citing Daigle Employment Agreement, Dkt. No. 563-1, at 1); see Tr. 535:14-18 (Mr. Daigle); Tr. 578:1-5 (Mr. Martin), an indication that the transaction was not at arm’s length and therefore could not reflect market price.

When confronted with his deposition testimony at trial, Mr. Martin agreed that he had originally stated that \$30.01 represented the market value. Tr. 582:19-583:1, 583:17-23, 584:1-4 (colloquy between Mr. Martin and Mr. Godfrey (pl.’s counsel)). Mr. Martin also agreed that, later in his deposition, he had stated that he was “not asking the [c]ourt to rely on the \$30.01 price as the offered price in this transaction.” Id. at 584:15-18. According to plaintiff, Mr. Martin changed his view only after “being confronted with his knowledge of the affiliate relationship” between TIPCO and Texas International. Pl.’s Br. 14-15; see Tr. 584:19-23 (colloquy between Mr. Martin and Mr. Godfrey (pl.’s counsel)) (testifying that he did not recall the sequence of events at his deposition). At trial, Mr. Martin acknowledged that if he “were a royalty owner in [DX 2717] . . . , [he] would want to know why the producer who was selling for the \$30.01 wasn’t getting that higher price of \$32 since both transactions were at the lease.” Tr. 585:4-11 (Mr. Martin).

Plaintiff states in briefing that “Mr. Martin omitted the affiliate relationship from his [Supplemental] [R]eport, but got caught when he was required to produce at his deposition all e-mails between himself and Mr. Daigle.” Pl.’s Br. 15; see Tr. 578:10-15 (Mr. Martin). In a March 11, 2010 e-mail to Mr. Daigle, Mr. Martin states: “We have to know for sure that [TIPCO was] not an affiliate of the producer.” PX 1611-0001 (e-mail); see Tr. 576:18-577:2 (Mr. Martin). According to plaintiff, Mr. Martin’s e-mail reflects a concern that “the \$30.01 price would be suspect” “if the transactions involved affiliate transfers.” Pl.’s Br. 15. Indeed, Mr. Martin acknowledged that he was concerned because “affiliate transactions are often challenged as not representing market price.” Tr. 577:8-11 (colloquy between Mr. Martin and Mr. Godfrey (pl.’s counsel)). However, at trial, Mr. Martin claimed that he did not think the affiliate relationship between TIPCO and Texas International “was important enough for [him] to mention.” Id. at 578:20-25.

Defendant states that “[p]laintiff’s continued fascination with whether Koch’s [purchases of oil] . . . were with a company that had some relationship with the first purchaser[] is misplaced.” Def.’s Resp. Br. 15 n.13. According to defendant, the more fundamental issue of whether buy-sell agreements are associated with nominal differential prices “applies regardless of whether or not a first purchase is involved, and thus regardless of the relationship between the first purchaser and the producer when a first purchase is not involved.” Def.’s Resp. Br. 16 n.13. As discussed above in Part III.A.2.b.i.a), the court finds that the presence of a net-out arrangement in TIPCO-Koch buy-sell agreements does not affect the proper characterization of Koch’s purchase of TIPCO’s oil: Koch’s purchase is at an offered price at the lease. The court

In response to further questioning by Mr. Philpott (defendant's counsel) and the court, Mr. Daigle stated that the vice president of TIPCO informed him that Koch wanted to conduct business on a flat-price basis because "they have a thousand of these agreements, and the administrative load is very heavy. They want to simplify it because when you have to track posted prices, you have to track them everyday . . . of the month." Tr. 509:21-510:5 (Mr. Daigle). Mr. Daigle testified that he remembers this agreement with Koch because it was the first time that TIPCO had engaged in a flat-price arrangement. *Id.* at 510:23-25. Citing Mr. Daigle's testimony, defendant contends that the purpose of the flat price underlying these transactions "was to reduce the administrative burden for Koch in administering its buy-sell arrangements, not to reach a negotiated, market price for the sale of oil." Def.'s Br. 21 (citing Tr. 510:1-5 (Mr. Daigle)).

It appears, as plaintiff contends, that defendant is attempting to rewrite the 1974 Regulations to "substitut[e] the term 'market price' for the 'offered' price requirement." Pl.'s Br. 11; *see also supra* Part I.B.1 (discussing the 1974 Regulations). Defendant's argument assumes that an actual offered price must be provably at some established market rate to comply with the 1974 Regulations. This is incorrect: the 1974 Regulations do not require a "market price." Market price is determined by what was offered--not vice versa.

Moreover, prior versions of the Osage Regulations contained market value and market price terms, which were eliminated from the 1974 Regulations. Regulations to Govern the Leasing of Lands in the Osage Reservation, Okla., for Oil and Gas Mining Purposes, Department of the Interior, July 3, 1912 (" . . . such royalty shall be paid in money, based on the actual market value . . . " (emphasis added)); Regulations to Govern the Leasing of Lands in the Osage Reservation, Okla., for Oil and Gas Mining Purposes, Department of the Interior, Aug. 26, 1915 (1915 Regulations) (" . . . settlement shall be based on the actual selling price, but not less than the highest posted market price . . . " (emphasis added)); *Osage II*, 72 Fed. Cl. at 636-37; *see* Tr. 436:5-437:3 (Mr. Reineke) (discussing 1915 Regulations). Plaintiff contends, correctly, "[b]y definition, under the 1974 Regulations, an 'offered' price is a valid royalty value." Pl.'s Br. 11-12; *see supra* Part III.A.1.c (finding that the Koch Top 50 Lists represent the highest prices actually offered by Koch for oil at the lease on the day in question). The court finds that these prices must be viewed as offered prices--they were prices that were offered by a willing buyer (Koch) and accepted by a willing seller (TIPCO) at the lease. *See* Tr. 331:18-

is concerned that defendant's expert, Mr. Martin, and defendant's counsel--who is counsel for the trustee--appear to have been ready to provide the court with testimony that could have obscured or hidden the corporate affiliate relationship between TIPCO and Texas International. Defendant's negative characterization of plaintiff's arguments regarding the affiliate relationship of TIPCO and Texas International as plaintiff's "continued fascination" is infelicitous. Defendant's litigation approach to the affiliate relationship is a source of concern to the court.

332:5 (Mr. Reineke) (stating that because the transaction between Koch and TIPCO occurred at the lease the \$32.00 Koch paid TIPCO complies with the 1974 Regulations). The extraneous circumstances of the buy-sell agreement surrounding the purchase at the lease are irrelevant to the issues before the court. The net-out aspect of the agreement does not affect the fact that there was an offer and acceptance for purchase of oil at the lease, with the risk of loss passing to the purchaser, Koch.

Defendant contends that plaintiff's market price argument "flies in the teeth of this [c]ourt's prior interpretation" of offered price in Osage II. Def.'s Resp. Br. 15 n.12 (citing Osage II, 72 Fed. Cl. at 644). Because the term "offered price" was not defined in the 1974 Regulations, "[t]he Tranche One trial required the [c]ourt to interpret the regulations." Def.'s Resp. Br. 15. Defendant cites Osage II for the proposition that "the term 'offered price' was introduced as a means of capturing the market value represented by bonus or premium payments that were offered to some but not all producers by a major purchaser over the posted price." Def.'s Resp. Br. 15 (quoting Osage II, 72 Fed. Cl. at 644).

In Osage II the court held that the 1974 Regulations added the term "offered price" to "capture the value of any premiums or bonuses offered for crude oil over the highest posted price" in the Kansas-Oklahoma area. Osage II, 72 Fed. Cl. at 638; see also supra Part I.B.1 (discussing the 1974 Regulations). The court interpreted the term "offered price" consistent with "its ordinarily understood meaning." Osage II, 72 Fed. Cl. at 643 (internal quotation omitted). The court noted that the BIA later removed the "offered price" term from the Osage Regulations, explaining that its removal "was 'to eliminate premium, bonus, or other like payments from consideration in the calculation of the royalty price for crude oil in Osage County, Oklahoma.'" Id. at 644 n.18 (quoting Leasing of Osage Reservation Lands for Oil and Gas Mining, 59 Fed. Reg. 22,104 (Apr. 8, 1994) (codified at 25 C.F.R. pt. 26) (emphasis omitted)). The court disagrees with defendant's view that plaintiff's argument "flies in the teeth of the [c]ourt's prior interpretation" of offered price. See Def.'s Resp. Br. 15 n.12. The court's observation in Osage II that, under the 1974 Regulations, an "offered price, paid to a producer by a purchaser, [is] an indicator of market price," Osage II, 72 Fed. Cl. at 644, does not change the fact that a price actually paid must be viewed as an "offered price":

Once the bonus or premium offered by a major purchaser is paid to a producer (that is, once the offer is accepted), the offered price becomes a 'realized' offer or actual selling price which, if higher than the highest posted price by any other major purchaser in the field on the day of sale or removal, is used to calculate royalty value and determine royalty payments under the Osage Regulations

Id. at 645 (internal quotations and citations omitted).

Even if the Osage Regulations were viewed as requiring a “market price” measured by something different from the actual arm’s length transaction involved here (which they do not), the weight of the evidence indicates that the \$32 Koch paid TIPCO was a negotiated market price. Further, even if defendant was entitled to rely on Mr. Daigle’s testimony that the \$32 Koch paid to TIPCO was a “non-negotiated flat price,”⁶⁹ the concept of a “non-negotiated flat price” makes no sense. It is unimaginable that a company would enter into a pricing arrangement covering a period of time except as a result of a negotiation based on business reasons mutually agreeable to both parties. The price so agreed to is both an offered price and a market price for the days it is in effect. The point was made at trial by defendant’s expert, Mr. Martin, who testified that the prices associated with buy-sell agreements “are agreed on by the parties for whatever degree of risk or other reasons that they have.” Tr. 555:15-22 (Mr. Martin).⁷⁰ TIPCO’s

⁶⁹ Defendant improperly relies on Mr. Daigle’s “flat-price” testimony for the truth of the matter asserted. See Fed. R. Evid. 803; Def.’s Br. 21 (citing Tr. 510:1-5 (Mr. Daigle)). The court accepted Mr. Daigle’s testimony only as evidence of his state of mind, as “an explanation that [Mr. Daigle] seemed to have believed at the time.” Tr. 510:16-18 (court).

⁷⁰ The court also notes, but does not rely upon, three additional pieces of unpersuasive evidence. First, the court acknowledges that, during Mr. Daigle’s post-trial deposition, Mr. Godfrey (plaintiff’s counsel) referred Mr. Daigle to deposition testimony he had given in a case involving Texaco, Daigle Dep. 39:5-12, in which Mr. Daigle stated that a Texaco employee had told him that “Texaco had aggressively marketed this oil to Koch and had numerous negotiations with Koch on trying to improve the price of the oil,” *id.* at 42:20-43:11; *accord id.* at 44:11-24; *id.* at 56:20-22. The court understands plaintiff to be arguing that, because Koch did not conduct business on a flat-price basis with Texaco at some undetermined point in time, it would not have done so with TIPCO in 1983. Defendant objected to this line of deposition questioning as hearsay. *Id.* at 43:14-16, 44:4, 44:25-45:3, 45:16-18 (Mr. Philpott (def.’s counsel)). The court need not and does not rely on this testimony.

Second, the court does not rely on DX 2718-0014, a screenshot of the queries Mr. Klager employed to generate the Koch Top 50 Lists. Martin Aff. 2-3; DX 2718-0014 (queries screenshot). Mr. Martin contends that Query3 contains data from the LeaseHandling Table and that the data contained therein “confirms that no bonuses were paid.” Martin Aff. 3. As discussed in more detail, *supra* note 39, Mr. Klager testified that the existence of a bonus entry in the LeaseHandling Table is just one way in which Koch indicated that it was offering a bonus. Tr. 69:4-11 (colloquy between Mr. Klager and Mr. Godfrey (pl.’s counsel)). A bonus could also be “buried in the price code,” that is, by “go[ing] into the price code for that lease and rais[ing] the price by the amount of the bonus.” *Id.* at 69:12-16. Moreover the 1974 Regulations do not require proof of a “bonus or premium” over a posted price in order for a price to be considered “offered.” See *supra* note 44.

Third, the court finds unpersuasive evidence concerning the relationship (or lack thereof) between the prices associated with BB-01 and D-01, the price code for Koch’s Oklahoma Sweet posting. At trial, Mr. Reineke testified that “during the time period this [BB-01] price code was

late 1970s transition from exchange agreements, which did not have “a price term for the oil,” to buy-sell agreements, which contained “a price for the buy and a price for the sell,” Daigle Dep. 31:6-32:5; see also supra note 59 (discussing Mr. Daigle’s trial testimony in which he explains exchange agreements and buy-sell agreements), also strongly supports the conclusion that the price terms mattered to the parties. Further, on cross-examination, Mr. Daigle agreed that he structured the transactions between TIPCO and Koch “so that the prices would be very reflective and very related to market prices.” Tr. 517:4-13 (colloquy between Mr. Daigle and Mr. Godfrey (pl.’s counsel)); accord id. at 512:25-513:23; id. at 516:8-24.

Mr. Reineke testified that the price offered by Koch to the first purchaser in a buy-sell agreement “needs to be market value because Koch is picking up the oil, they have possession of the oil, they have risk of loss.” Tr. 426:20-23 (Mr. Reineke) (referring to DX 2717-0002). Mr. Reineke further testified that, “from a business standpoint,” there is no reason for Koch to pay higher than market value for the oil “in case there is some kind of . . . loss.” Tr. 427:20-428:3 (Mr. Reineke); see also id. at 333:3-5 (stating that \$32 is the market value because it represents the first arms-length transaction); Tr. 335:14-19 (colloquy between Mr. Reineke and Mr. Godfrey (pl.’s counsel)) (agreeing that he could not “conceive of a reason why a purchaser in a buy[-]sell arrangement like this at the lease end might be willing to include in a contract an artificial value that was above the level at which they actually valued the oil”). If Koch were to lose the oil while it is in its

used,” the price assigned to the BB-01 price code was two dollars higher than Koch’s posted price for Oklahoma Sweet. Tr. 599:10-14 (colloquy between Mr. Reineke and Mr. Godfrey (pl.’s counsel)); see id. at 610:5-9 (stating that the price associated with BB-01 was \$32 and the price associated with D-01 was \$30); see also Order on Joint Mot. to Amend Trial R. (adding to the record JX 200 (screen print of D-01), DX 2734 (graph comparing BB-01 and D-01 prices), and affidavits of Mr. Reineke and Mr. Martin). According to Mr. Reineke, there was “so much volume between TIPCO and Koch that Koch had to give [TIPCO] the two dollar bonus to keep the deal in effect.” Tr. 600:3-6 (Mr. Reineke); accord id. at 599:17-19.

The court does not understand Mr. Reineke to be claiming that the price associated with BB-01 was necessarily based on Koch’s posting for Oklahoma Sweet (D-01). See Pl.’s Resp. Br. 13 (arguing that defendant has “set up a straw man, arguing that the BB-01 price could not possibly have been derived from the Oklahoma Sweet price, D-01”) (emphasis in original). In fact, Mr. Reineke concedes that “[t]here is no information available about exactly how the BB-01 prices were calculated over time.” Reineke Decl. 1. The evidence simply shows that D-01 stayed at a constant price of \$30 from February of 1983 through October of 1983, JX 200 (D-01 screen print), DX 2734 (graph comparing BB-01 and D-01 prices), and that D-01 represented a negotiated “market price,” see Tr. 531:19-532:9, 534:5-6 (colloquy between Mr. Daigle and Mr. Godfrey (pl.’s counsel)) (admitting that Koch’s posting for Oklahoma Sweet (D-01) was a market price). Accordingly, the fact that BB-01 stayed at a constant price of \$32 during the same time period, from February of 1983 through October of 1983, DX 2734, does not persuade the court that it is improper to use the price assigned to BB-01 as an offered price.

possession, Koch would “have lost something at market value.” Tr. 428:2-3 (Mr. Reineke); accord id. at 423:12-16.

In addition, Mr. Klager testified that title of the oil transfers to Koch as the oil leaves the tank and enters Koch’s trucks, Tr. 87:2-6 (Mr. Klager), and Koch has the risk of loss from the time Koch picks up the oil at the lease until it resells it at another location, Tr. 87:7-14 (colloquy between Mr. Klager and Mr. Kim (def.’s counsel)). Mr. Klager also testified that Koch would not have paid more than market price for this oil, because Koch was “purchasing it at the well, and hoping to sell it somewhere else and make a profit.” Id. at 87:15-20; see id. at 83:11-19.

Based on the foregoing, the court finds that the net-out arrangements associated with TIPCO-Koch buy-sell agreements resulted in actual purchases of oil at the lease in an arm’s length transaction and therefore the prices associated with these arrangements are “offered prices” under the 1974 Regulations. In addition, where there is evidence of an actual offered price, such as appears in the Koch Top 50 Lists, it is not necessary that there be additional evidence of a market price for the day in question. Such prices are offered prices contemplated by the 1974 Regulations. Accordingly, the court finds reasonable plaintiff’s use of the prices in the Koch Top 50 Lists associated with the BB-01 price code.⁷¹ The parties shall take into account the \$32 price associated with BB-01 from February of 1983 through October of 1983 and the \$35 price associated with BB-01 from July of 1982 through August of 1982 when calculating damages.

ii. Constant Average Price

Defendant identifies eighteen Koch leases accounting for \$378,375 of plaintiff’s claim that, defendant contends, are associated with “constant prices that are averaged over time.” Def.’s Br. 17; see Martin Supp. Rpt. ¶ 19; see Tr. 472:3-473:4 (colloquy between Mr. Martin and Mr. Philpott (def.’s counsel)). These eighteen leases, according to Mr. Martin, have a price code description of the “average Merc price in advance for a six month[] period for Kansas crude,” Tr. 472:14-16 (Mr. Martin); see Martin Supp. Rpt. ¶ 19, which is synonymous with “the New York Mercantile Exchange [(NYMEX)] futures price for WTI Crude Oil at Cushing, Oklahoma,” Martin Supp. Rpt. ¶ 19; see Tr. 473:5-13 (colloquy between Mr. Martin and Mr. Philpott (def.’s counsel)). Mr. Martin’s testimony and report state that future prices are often used for hedging and “hedging shouldn’t be considered for oil prices for Osage.” Tr. 473:14-17 (Mr. Martin) (citing Mr. Reineke (“Well I don’t think that hedging is a proper way to value what needs to be paid

⁷¹ The court therefore rejects defendant’s argument that “if [p]laintiff is correct that Koch’s oil business was a ‘small margin business’ with ‘a reasonable estimate of [its] profit margin [at] one quarter [of one] percent,’ Daigle [Dep. 28:19-30:12], it would be wholly unreasonable to assume that Koch was shattering its profit margin for the small subset of its business associated with price code BB01.” Def.’s Br. 23 n.5.

on royalty, no.”); see Martin Supp. Rpt. ¶ 19 (citing Reineke Dep. May 19, 2010 at 15:22-23); Def.’s Br. 17-18. Mr. Martin also points to a three-month period when the price for these leases does not change, which he deems unusual “because sometimes the markets are volatile, and sometimes these postings change many times in the course of a month, or certainly in a year.” Tr. 472:17-22 (Mr. Martin). Mr. Martin testified that he failed at his attempts to replicate the price and concludes that, without additional information, he cannot accept the price as a component of plaintiff’s claim. Tr. 473:22-474:1 (colloquy between Mr. Martin and Mr. Philpott (def.’s counsel)); see *id.* at 474:2-7 (explaining that he “looked at the NYMEX prices, and [he] tried do some averaging, and [he] tried to figure out where it came from” with no success).

According to Mr. Klager, the presence of an “average Merc price in advance for a six month period for Kansas crude” in a price code’s description field would not affect his generation of the Koch Top 50 Lists. Tr. 80:7-14 (colloquy between Mr. Klager and Mr. Godfrey (pl.’s counsel)). Mr. Klager explained: “If we had a price code set up for that, and we had leases that were assigned to that price code, those would have been the prices that we would have paid for the lease.” Tr. 80:16-19 (Mr. Klager). Moreover, Mr. Klager agreed that it would not be unusual for Koch to “maintain[] the same price for a single price code” over a period of three months. Tr. 80:21-25 (colloquy between Mr. Klager and Mr. Godfrey (pl.’s counsel)).

Defendant raises two main issues regarding the “constant average price” code, both of which reprise Mr. Martin’s testimony at trial.⁷² First, defendant claims that the price code appears to derive its price from oil sold at Cushing, Oklahoma and--based on the court’s statement in *Osage II*--“prices paid at Cushing are not appropriate to base royalty on.” Def.’s Br. 17 (citing *Osage II*, 72 Fed. Cl. at 654 n.20). This argument misreads the point of the court’s observation concerning “prices paid at Cushing.” The issue is not how prices are determined, but where prices are paid. Prices paid “at Cushing” are not prices paid “at the lease.” It is not improper to set prices to be paid at the lease by reference to “prices paid at Cushing” or anywhere else for that matter. See Tr. 324:20-325:2 (Mr. Reineke) (“This is no different than referencing a price somewhere else, like referencing west Texas intermediate It’s still a reference to a price”). Accordingly, the court does not find Koch’s use of a price code that references

⁷² Defendant also argues here that there is “no basis to conclude or even assume that the use of such prices was designed to represent a bonus or premium over a posted price,” Def.’s Br. 18, which--according to defendant--is critical because in *Osage II* the court stated that “the term ‘offered price’ was introduced as a means of capturing the market value represented by bonus or premium payments that were offered to . . . producers by a major purchaser over the posted price,” *id.* (quoting *Osage II*, 72 Fed. Cl. at 644) (internal quotation marks omitted). As the court addresses above, *supra* note 44, neither the 1974 Regulations nor the court’s characterization of offered prices in *Osage II* require proof that offered prices were “designed to represent a bonus or premium over a posted price.”

NYMEX's price for crude oil sold at Cushing to be "inconsistent with 'the Tranche One trial damage calculation methodology.'" See Def.'s Br. 17 (quoting Osage IV, 93 Fed. Cl. at 6); Def.'s Resp. Br. 16; see also supra Part III.A.1.b (discussing the court's Tranche One trial damage calculation methodology).

Second, defendant contends that the price code employs futures pricing, which is a common hedging tactic. Def.'s Br. 17-18. According to defendant, prices associated with "an average future Merc price" "certainly cannot be said to represent market value as of the date of sale," id. at 18, an argument that appears to assume that the 1974 Regulations contain the term "market value." They do not. The 1974 Regulations use the term "highest . . . offered price." 25 C.F.R. § 183.11(a)(2) (1975); see supra Part III.A.2.i.b) (finding that the 1974 Regulations do not require "market price"). The court does not credit Mr. Martin's contention that leases containing a constant average price "code" are not valid measures of offered prices because they use a "hedging" tactic. Mr. Klager proffered uncontradicted testimony that "those would have been the prices that we would have paid for the lease." Tr. 80:16-19 (Mr. Klager).

Plaintiff states that the "constant average price argument" is--like defendant's arguments concerning "Permian discontinued prices" and "inconsistent price code"--"based entirely on a text field description that is unclear and inconclusive." Pl.'s Br. 10; see Tr. 72:23-25 (Mr. Klager) ("[Price code descriptions] didn't add anything to what I was trying to do. When [Koch] buy[s] crude oil we don't use price code descriptions to tell us anything."). According to plaintiff, although there is no information as to how the price associated with this price code was calculated, "Mr. Martin argues that however it was calculated, it must be invalid, because the price stays the same for three months at time." Id. (emphasis in original). Plaintiff counters that it is not unusual for a price code's pricing to remain the same for three months, citing testimony of both Mr. Klager and Mr. Reineke. Pl.'s Resp. Br. 11 (citing Tr. 80:21-25 (Mr. Klager); Tr. 326:4-13 (Mr. Reineke)); see also Tr. 531:19-532:9, 534:5-6 (colloquy between Mr. Daigle and Mr. Godfrey (pl.'s counsel)) (admitting that Koch's posting for Oklahoma Sweet, which stayed constant from February through October of 1983, was a market price).

The court agrees that Mr. Martin's assertions appear to be speculative. See Pl.'s Resp. Br. 11. Mr. Martin stated simply that he "can't accept this as it is without perhaps seeing the contract, and seeing really what is driving [the price]." Tr. 473:23-25 (Mr. Martin). The 1974 Regulations simply do not require a contract to have been formed to validate a price as "offered." See 25 C.F.R. § 183.11(a)(2) (1975). Despite his consideration of NYMEX prices and his attempts "to do some averaging," Mr. Martin was unsuccessful at replicating the price. Tr. 474:2-7 (colloquy between Mr. Martin and Mr. Philpott (def.'s counsel)); accord id. at 592:15-23. The court has no reason to doubt the truth of Mr. Klager's testimony that if Koch "had lease[s] that were assigned to that price code, those would have been the prices that [Koch] would have paid for the lease." Tr. 80:16-19 (Mr. Klager). The court similarly finds credible the testimony of Mr. Klager

indicating that it would not be unusual for Koch to have maintained “the same price for a single price code over a three month period.” Tr. 80:21-25 (colloquy between Mr. Klager and Mr. Godfrey (pl.’s counsel)); see also Tr. 326:8-17 (Mr. Reineke) (agreeing that it would not be unusual “for a company to pay a fixed price for a three month period during which there are fluctuations in postings”). Lending further support to the accuracy of this price code is the fact that its associated price changed four times over fifteen months, which indicates that “somebody [was] entering the information deliberately to change the numeric price for that price code.” Tr. 327:4-11 (Mr. Reineke). Plaintiff is entitled to rely on the leases associated with constant average prices in calculating its damages.⁷³

iii. Permian Discontinued Prices

Mr. Martin also addressed two Koch leases containing a price code description of “Permian”⁷⁴ Western Oklahoma (Except Panhandle).” Martin Supp. Rpt. ¶ 18 (footnote added); see Tr. 462:15-25, Tr. 469:8-16, 470:16-24 (Mr. Martin). The description references “a particular type of crude oil that Permian was willing to purchase at the lease for some of the time covered by the [Koch] Top 50 [Lists].” Martin Supp. Rpt. 8 n.5. According to Mr. Martin, Koch continued to rely upon this posting even after the posting was discontinued. Tr. 469:17-23 (Mr. Martin); Tr. 470:20-471:15 (colloquy between Mr. Martin and Mr. Philpott (def.’s counsel)). Mr. Martin asserts that Permian last published a price for this posting on June 28, 1989--the same day that Koch last updated the price for this price code. Tr. 470:20-471:15 (colloquy between Mr. Martin and Mr. Philpott (def.’s counsel)); Martin Supp. Rpt. ¶ 18; compare DX 2713-0005 (Permian Price Bulletin No. 89-26 showing “Western Oklahoma (Except Panhandle)” posting with an effective date of June 28, 1989) with DX 2713-0007 (Permian Price Bulletin No. 89-27, which lacks the “Western Oklahoma (Except Panhandle)” posting). Mr. Martin contends that, because the Price Master table of the Koch database does not have an inactive date field, the price associated with the Permian posting “remains constant indefinitely.” Martin Supp. Rpt. ¶ 18; Tr. 469:17-23 (Mr. Martin); see Def.’s Br. 16. Defendant and

⁷³ The court does not credit defendant’s argument that offered prices set for a fixed period of time into the future are invalid as a “hedge.” Mr. Reineke describes a hedge as “something that is a financial instrument outside of your oil sales contract.” Tr. 325:14-17 (Mr. Reineke). With a hedge, the contracting parties “agree today on a price that stays the same for a future delivery at some point in the future.” Tr. 325:24-326:3 (colloquy between Mr. Reineke and Mr. Godfrey (pl.’s counsel)). The court therefore finds that paying on an average price calculated by future values, however named, does not invalidate the price so determined. See Tr. 325:5-10 (colloquy between Mr. Reineke and Mr. Godfrey (pl.’s counsel)). The so-called hedge agreement simply provides the terms on which offers to purchase in the future are made. There is no reason why a price set for a period of time into the future, based on a defined formula, should not be viewed as an offered price under the 1974 Regulations.

⁷⁴ “Permian is a purchaser of oil [that] publishes a price bulletin.” Martin Supp. Rpt. at 8 n.5.

Mr. Martin conclude that “[p]rices resulting from these two leases after June 28, 1989,” which account for \$63,434 of plaintiff’s claim, “should be removed from the Top 50 [Lists] because they are database errors and not offers.” Martin Supp. Rpt. ¶ 18; see Tr. 462:20-463:1 (Mr. Martin); Def.’s Br. 16.

In response to Mr. Godfrey’s (plaintiff’s counsel) summary of Mr. Martin’s Permian discontinued prices argument, Tr. 75:23-76:12 (Mr. Godfrey), Mr. Klager acknowledged that this information “sounds kind of suspicious,” Tr. 76:14 (Mr. Klager). After Mr. Godfrey inquired as to whether “it [is] possible that the price on those leases continued to be an active price even after the price code posting . . . on which the price code was based was discontinued,” Tr. 76:25-77:3 (Mr. Godfrey), Mr. Klager stated: “If these are the real facts, it would have been an error. . . . I can’t tell from just looking as to whether or not it is an error,” Tr. 77:5-8 (Mr. Klager). Similarly, Mr. Reineke testified that the two leases with post-June 28, 1989 Permian price code descriptions could have been an error and that “it does look unusual.” Tr. 328:13-14 ((colloquy between Mr. Reineke and Mr. Godfrey (pl.’s counsel))); Tr. 328:22-329:1 (Mr. Reineke).

Plaintiff notes that defendant’s argument “pits the text field associated with a price code against the actual prices assigned to the price code,” Pl.’s Br. 9 (emphasis in original); see id. at 7, an observation that plaintiff also makes with respect to Mr. Martin’s “constant average price outlier,” see supra Part III.A.2.b.ii, and “inconsistent price code outlier,” see infra Part III.A.2.b.iv. Mr. Klager did not use price code descriptions (the text field associated with a particular price code) in generating the Koch Top 50 Lists. Tr. 72:17-20 (colloquy between Mr. Klager and Mr. Godfrey (pl.’s counsel)). At trial, Mr. Klager explained: “[Price code descriptions] didn’t add anything to what I was trying to do. When [Koch] buy[s] crude oil we don’t use price code descriptions to tell us anything.”⁷⁵ Tr. 72:23-25 (Mr. Klager); see Supplemental Expert Report of Daniel T. Reineke, P.E. (Reineke Supplemental Report or Reineke Supp. Rpt.), Ex. A, Dkt. No. 523, at 4-5 (stating that, during their April 9, 2010 meeting, Mr. Klager explained to the parties “several times . . . that the description fields containing text in the database were not used in creating the Top 50 List[s] nor were they relevant in determining offered prices”).

Plaintiff makes the point that “Mr. Martin’s analysis compares a text field referencing a Permian posted price with the price assigned to that price code, finds an

⁷⁵ Defendant contends that it is not surprising that Mr. Klager chose not use the price code description fields, “given his narrow focus . . . that was limited to his automating a calculation to manipulate numbers.” Def.’s Resp. Br. 11 n.8. If this is an argument, the court does not understand its relevance under the 1974 Regulations. Mr. Klager was asked to identify the highest prices offered by Koch at leases within Oklahoma and Kansas, limited by the time period at issue. See Tr. 70:19-71:3 (colloquy between Mr. Klager and Mr. Godfrey (pl.’s counsel)); Def.’s Resp. Br. 9.

inconsistency, and assumes that the text field is correct.” Pl.’s Br. 9 (emphasis in original). This point is supported by Mr. Martin’s testimony that his analysis of the Permian discontinued prices “depends on the assumption that the price code description field in Koch’s database is correct.” Tr. 590:19-22 (colloquy between Mr. Martin and Mr. Godfrey (pl.’s counsel)). As plaintiff states, the information needed to resolve such inconsistencies “is no longer available, and without such information, it is impossible to conclude that the price is incorrect.” Pl.’s Br. 9. Plaintiff concludes that defendant “incorrectly treats the possibility of error as though doubts must be resolved in its favor when the opposite is true.” Pl.’s Resp. Br. 10 (internal citation omitted).

In response to an inquiry from Mr. Kim (defendant’s counsel) regarding the accuracy of the text fields versus the accuracy of numerical fields, Mr. Klager testified that “if somebody is typing in a number and typing in words that go along with that number, I would think they would be as careful typing in the words as they did the numbers.” Tr. 112:16-25 (colloquy between Mr. Kim and Mr. Klager); Def.’s Resp. Br. 11 n.8. However, Mr. Klager later amplified and clarified his testimony:

The text data that is being entered is less important in that it isn’t something that would affect payment, whereas a price code would. And the folks . . . who are actually entering that data, I think they would understand that it was an intellectual thing. You got to get the price code right, or you’re going to pay the wrong dollars out the door Price codes were really important, and I think they would have paid very close attention to that.

A typo while typing in a price code description would not have been that big of a deal. . . . They may have gotten some letters wrong. For that matter, descriptions sometimes have numbers in them. They may have gotten those numbers wrong, and it wouldn’t have had the weight that a price code being typed in at that very same time would have had. And I think that folks entering that would have realized that at the time.

Tr. 113:11-114:6 (Mr. Klager). Although the arguments adduced by defendant may raise some doubts, the Federal Circuit has directed that, in a breach of trust case, “all doubts will be resolved against [the trustee] and not in [the trustee’s] favor.” Warm Springs, 248 F.3d at 1373. Plaintiff is entitled to rely on the two leases purportedly associated with a Permian discontinued price in its calculation of damages.

iv. Inconsistent Price Code

Defendant also states that, for eight days in January of 1989, several leases within the Koch Top 50 Lists have a price code (D-39) that is inconsistent with the price code’s description--“Koch Oklahoma Sweet with no gravity deduction above 31 degrees.” Def.’s Br. 18 (internal quotations omitted); Tr. 474:10-475:4 (colloquy between Mr.

Martin and Mr. Philpott (def.'s counsel)); Martin Supp. Rpt. ¶ 21. According to Mr. Martin, if the gravity of oil for which an offer is made is above 31 degrees, the price associated with the D-39 price code should be identical to the D-01 price code--"Koch's Oklahoma Sweet at 40 degrees." Tr. 474:18-23 (Mr. Martin); Martin Supp. Rpt. ¶ 22. However, the 40-degree price for the D-39 price code is \$1.75 higher than the 40-degree price for Koch's Oklahoma Sweet posting from January 1 to January 8, 1989. Def.'s Br. 18; Martin Supp. Rpt. ¶ 22; see Tr. 475:10-14 (Mr. Martin). Defendant attributes \$24,252 of plaintiff's claim to inconsistent price code values, concluding that the Top 50 prices for leases using the D-39 price code "were based on an apparent data entry error" and should be removed for those eight days. Def.'s Br. 18-19; see Martin Supp. Rpt. ¶ 22; Tr. 475:22 (Mr. Martin).

Plaintiff responds, as it did with respect to "outliers" resulting from constant average prices and Permian discontinued prices, that "Mr. Martin's 'inconsistent price code value' analysis is another argument that 'depends on the assumption that the text description field for the eight days at issue for that price code is correct.'" Pl.'s Br. 10 (quoting Tr. 590:25-591:2 (Mr. Godfrey) (pl.'s counsel)). Plaintiff relies on the testimony of Mr. Klager for the conclusion that "the frequent changes in the prices associated with the price code" indicate "that someone at Koch deliberately made the changes." Id. Mr. Klager testified that it would have been necessary for a Koch employee to have affirmatively changed the price value associated with D-39 starting on January 9, 1989. Tr. 78:24-79:6 (colloquy between Mr. Klager and Mr. Godfrey (pl.'s counsel)). If a Koch employee had concluded that this price value should have applied retroactively through January 1, 1989, Mr. Klager testified that the employee certainly could have made that change. See id. at 79:22-80:2. Plaintiff concludes that such changes were made "in order to reflect the deal made by Koch—that is, to correctly reflect the price Koch was offering to pay for the oil in question." Pl.'s Br. 10; see supra note 39 (discussing Koch's methods for changing pricing arrangements assigned to price codes).

Defendant counters that plaintiff's attempts "to adduce testimony from Mr. Klager that the change must have been deliberate," were unsuccessful because "on cross-examination, he forthrightly [sic] admitted that the scenario seemed erroneous."⁷⁶ Def.'s Br. 18-19 (citing Tr. 167:12-168:8 (Mr. Klager)). At trial, Mr. Klager confirmed that the 40-degree prices for the D-39 and D-01 price codes "don't appear to be consistent with the descriptions" during the January 1 to January 8, 1989 timeframe. Tr.

⁷⁶ Defendant also contends that plaintiff's theory is "inconsistent with the fact that the price code definition was changed slightly in January 1989." Def.'s Br. 19 n.4. According to the Martin Supplemental Report, the price code definition of D-39 changed from "Koch Oklahoma Sweet with no gravity deduction above 31 degrees," Martin Supp. Rpt. ¶ 21, to "Koch Oklahoma Sweet with no gravity deduction above 30 degrees," id. at 9 n.7. It is not clear to the court how the change in price code definition detracts from plaintiff's theory.

166:4-6, 166:13-16 (colloquy between Mr. Klager and Mr. Kim (def.'s counsel)). Mr. Klager could not explain this inconsistency, offering only to "look back in time." Id. at 166:17-24. When pressed by Mr. Kim (defendant's counsel), Mr. Klager responded:

[T]his would have been the kind of thing that very well could have come across my desk in 1989, okay? And what I would have been doing is making a few phone calls. I would have called our crude oil administration group, and I would have asked if they knew of anything, you know, why would D39 have a different 40-degree price than D01. And then absent them having an answer, I'd probably be calling the crude rep that appeared to be predominantly using D39, and asking if there is something he is intending to do. . . . And I'd just start asking questions, trying to ferret out if somebody has done something deliberately, and why in the world the description isn't reflecting it.

So the point is, I could have done some contemporaneous work. But after the fact, I mean, the only thing we could potentially do would be to look for some document that describes it. But I would not be hopeful for finding that.

Tr. 167:12-168:8 (Mr. Klager).

This evidentiary issue is before the court because of defendant's failure to collect and maintain data that it was required to collect under the 1974 Regulations. The Koch Top 50 Lists provide sufficient evidence that offers were made at the prices associated with the D-39 price code in January of 1989. Where, as here, defendant's arguments serve to create doubts, the Federal Circuit has directed that in a breach of trust case, "all doubts will be resolved against [the trustee] and not in [the trustee's] favor." Warm Springs, 248 F.3d at 1373. Accordingly, plaintiff is entitled to rely on leases associated with the D-39 price code in calculating damages for this eight-day period.

v. Price Code Modification

Mr. Martin identified at least one lease within the Koch Top 50 as having a price code alleged to have been erroneously modified for a period of six months, accounting for \$359,003 of plaintiff's claim. Tr. 476:20-24, 477:18-478:2 (Mr. Martin); Martin Supp. Rpt. ¶ 23. Mr. Martin claims that Koch purchased approximately 2400 barrels of oil from this lease--which was assigned a D-01 price code--in September of 1982. Tr. 477:18-21 (Mr. Martin); Martin Supp. Rpt. ¶ 23. In October of 1982, the price code for the lease temporarily changed to D-16 (which is associated with a price 75 cents higher than the price associated with the price code D-01), whereupon Koch ceased purchasing from the lease. Tr. 477:22-25 (Mr. Martin); Martin Supp. Rpt. ¶ 23. After six months, the lease was reassigned a D-01 price code, and Koch resumed making significant

purchases from the lease. Tr. 477:25-478:2 (Mr. Martin); Martin Supp. Rpt. ¶ 23. Mr. Martin contends that this lease should be removed from the Koch Top 50 Lists during this six-month time period “because it is not reasonable to believe that a producer would stop selling to Koch during a period when the ‘offer’ is higher than posted prices and to resume selling to Koch when Koch lowers its offer.” Martin Supp. Rpt. ¶ 23; Tr. 478:6-14 (colloquy between Mr. Martin and Mr. Philpott (def.’s counsel)).

Defendant attempts to deflect the argument that it is reading into the 1974 Regulations the requirement “that an offer necessarily needs the evidentiary foundation of a purchase statement.” Def.’s Br. 19-20. Defendant argues, instead, that “Mr. Martin was able to conclude from the specific factual circumstances the likelihood of a data error during the time period where purchases stopped for no apparent reason.” *Id.* at 20. Defendant claims that it recognized “some sort of data error” associated with this six-month time period prior to its gaining additional access to Koch data--which ultimately revealed the apparent price code switch. *Id.*; *see supra* Part I.D (discussing May 5, 2010 Order granting defendant additional access to the Koch database). According to defendant, the prices associated with the D-16 price code during these six months still seem erroneous because “it would make no sense for a producer that was producing and selling to Koch to stop upon being offered a higher price.” Def.’s Br. 20. “Given the lack of contractual terms or any other evidence suggesting or explaining any temporary bonus or premium offer (as well as any reasons why such bonus or premium appeared to have been refused),” defendant concludes that plaintiff has failed to meet its burden of proving that these prices represent accurate, historical “offered prices.” *Id.*

Mr. Martin testified that the fact that the prices associated with the D-16 price code are not supported by purchase statements is “a component” of his price code modification analysis. Tr. 478:19-22 (colloquy between Mr. Martin and Mr. Philpott (def.’s counsel)). Mr. Martin testified that he needs additional information in order to determine the impetus behind “the way the price changed . . . unexpectedly, and then . . . reverted back.” Tr. 478:24-479:5 (Mr. Martin); *see id.* at 478:3-5. However, on cross-examination, Mr. Martin admitted that, if he was able to locate “purchase statements showing purchases of oil between October of 1982 and March of 1983 for the D16 price, . . . that would explain [his] concern here, and [he] would no longer be worried about this price.” Tr. 590:10-16 (colloquy between Mr. Martin and Mr. Godfrey (pl.’s counsel)). Moreover, Mr. Martin failed to offer an alternative explanation as to “why Koch would have changed the price code of this lease to D16 if it were not offering to buy oil at the D16 price.” *Id.* at 592:5-14. Although defendant contends that Mr. Martin’s analysis depends on “the specific factual circumstances,” Def.’s Br. 20, defendant fails to identify such circumstances, and instead simply reasons that “it would make no sense for a producer that was producing and selling to Koch to stop upon being offered a higher price,” *id.*; *see* Tr. 478:6-14 (colloquy between Mr. Martin and Mr. Philpott (def.’s counsel)). Defendant’s argument begs the question of whether the producer did, in fact, continue to sell to Koch during this six-month period. *See* Pl.’s

Resp. Br. 7 (“This argument mirrors Mr. Martin’s incorrect assumption that his failure to find any purchase statements for this lease . . . means there was no purchase.”).

As Mr. Klager testified, the absence of purchase statements from October 1982 to March 1983 is not dispositive of the issue of whether an offered price exists. Tr. 74:10-20 (colloquy between Mr. Klager and Mr. Godfrey (pl.’s counsel)); see Pl.’s Br. 7-8; see also Tr. 322:2-5 (Mr. Reineke) (“[W]e may not have all the purchaser statements, and just because we don’t have a purchaser statement doesn’t mean the offer [wasn’t] made.”). Further, both defendant and Mr. Martin have previously acknowledged the possibility that “they simply may not have found the [relevant] purchase [statements] given the difficulty of working with microfiche form in which the Koch [purchase statements] are maintained.” Osage IV, 93 Fed. Cl. at 19; see Pl.’s Br. 8.⁷⁷ And, in Osage IV, the court held that the “the 1974 Regulations do not require that purchases at the highest offered price exist, merely that the offers have been made.”⁷⁸ Osage IV, 93 Fed. Cl. at 19. There is sufficient evidence to support the conclusion that offers under the D-16 price code were made. Plaintiff is entitled to rely on these prices in calculating damages with respect to this six-month period.

vi. Inactive After Last Run Date

Defendant also asserts that the Koch Top 50 Lists includes prices associated with inactive leases. Def.’s Br. 23; Martin Supp. Rpt. ¶ 32. Underlying this argument is the assumption that an offer cannot exist once a contract has become inactive. See Def.’s Br. 23 (claiming that once the “deal is over . . . any related offer is no longer effective” (internal quotation marks and citations omitted)); Martin Supp. Rpt. ¶ 28 (“The Top 50 includes leases for which offers could not exist because the underlying contract has expired.”); id. ¶ 32 (“[W]ithout an active contract, there cannot be an offer.”). Mr. Martin identifies “at least one lease” with a price that “appear[s] in the Top 50 after Koch

⁷⁷ Defendant counters that “Mr. Reineke has long had access to a complete set of Koch purchase statements . . . [and] is unable to point to any purchase statements Mr. Martin may have missed that would relate to his analyses.” Def.’s Resp. Br. 13. The Warm Springs court has provided guidance that resolves this dispute: “to the extent that the difficulty in determining the amount of loss suffered by the Tribes is attributable to improper accounting procedures followed by the BIA, the consequences of those difficulties should not be visited upon the Tribes.” Warm Springs, 248 F.3d at 1375.

⁷⁸ The court’s statement in Osage IV, 93 Fed. Cl. at 19, that “more than 98% of the Koch Top 50 offered prices are corroborated by documented transactions supports, rather than detracts from the authority of the Koch Top 50 data,” while likely not supported by documents now in evidence or readily available, does not bear on the court’s conclusions in this Opinion. Therefore, the court does not address defendant’s dispute with the court. See Def.’s Resp. Br. 13 n.11.

no longer had a contract with a producer.” Id. ¶ 29; see Def.’s Br. 23. The lease remained on Koch’s Top 50 List as an active price after Farmland Industries (Farmland) secured the right to purchase oil from the lease. Martin Supp. Rpt. ¶ 29; see DX 2721 (Farmland lease). Because the price associated with the Farmland lease matched the highest price offered on seven days, Martin Supp. Rpt. ¶ 29, it does not affect plaintiff’s claim for damages.⁷⁹ Mr. Martin also offers several other “examples of instances in which contracts covering one or more leases remained in an active status in Koch’s database long after they should have.” Id. ¶ 30; see Def.’s Br. 23-24; DX 2722 (internal Koch memos and letters). Although most of these examples are not associated with the Koch Top 50 Lists, defendant claims these documents represent a small sample and that “[t]here are undoubtedly many more examples in the hundreds of boxes of similar materials that were not provided.” Def.’s Br. 24 (quotation omitted); see Martin Supp. Rpt. ¶¶ 30, 31.

Defendant argues that “Koch’s database did not have a place for employees to indicate that a lease was now inactive, and Koch did not even have any set procedure or policy regarding what its employees were supposed to do when it no longer intended to purchase from a lease.” Def.’s Br. 23; Tr. 553:24-554:4 (Mr. Martin) (testifying that he “had seen from other evidence . . . that Koch did not have a very good way of timely turning off the switch, so to speak, when production stopped [or] when leases were sold”). Owing to Koch’s alleged failure to keep the inactive date fields in the Koch database updated, defendant proposes using the last run date as a reasonable proxy date for a particular lease’s expiration. Def.’s Br. 24; Martin Supp. Rpt. ¶ 33. For support, Mr. Martin points to the Farmland-associated lease, which had an inactive date in 1993. Id. The last run date for the lease, however, was in 1987--the same year Farmland acquired the rights to purchase oil from the lease. Id. Defendant therefore equates the last run date with the last date an offer exists. Def.’s Br. 24; see Tr. 554:10-12 (Mr. Martin); 591:14-17 (colloquy between Mr. Martin and Mr. Godfrey (pl.’s counsel)). Defendant further contends that “Koch, in operating its own business, itself used this last run date data as a way of identifying inactive leases.” Def.’s Br. 24 (citing DX 2722 (internal Koch memos and letters) and Tr. 125-143 (Mr. Klager)). Although defendant admits that Koch’s offers to purchase oil may have extended beyond “the last run date,” defendant contends that “Koch has not produced contractual data that might more definitively answer this question.” Id.; see Tr. 554:12-15 (Mr. Martin) (recognizing that the “last run date” is an estimate, but claiming he lacks anything more accurate such as the “contract system that shows the contract stopped on a certain date”). Defendant

⁷⁹ In his Supplemental Report, Mr. Martin identifies an additional 2351 leases within the Koch database in which the highest price exists after the lease has become inactive. Martin Supp. Rpt. ¶ 32. Because the prices associated with these leases are equal to the highest Top 50 price, id., they do not affect plaintiff’s claims.

estimates that \$74,493 of plaintiff's claim is associated with leases with prices in the Top 50 Lists that occurred after the last run date. Def.'s Br. 24; Tr. 554:16-18 (Mr. Martin).

At trial, Mr. Klager testified that the Koch database did not have a "single place" that indicated that Koch was no longer purchasing from a particular lease. Tr. 73:12-16 (colloquy between Mr. Klager and Mr. Godfrey (pl.'s counsel)); Tr. 102:4-7 (Mr. Klager). Mr. Klager explained:

[W]e didn't have a place in the database where we went and . . . checked off, saying this lease is now inactive, and it turned it off through the entire system. But instead, we would go in and deactivate the lease ownership and set the lease to a price code that was effectively zero dollars per barrel, potentially put a comment in saying that we had lost the lease, those kinds of things.

Tr. 102:5-13 (Mr. Klager). Moreover, Mr. Klager stated that he did not use the last run date in generating the Koch Top 50 Lists. Tr. 75:6-9 (colloquy between Mr. Klager and Mr. Godfrey (pl.'s counsel)). He did not consider this data field because "it just didn't seem to be relevant to what [he] was trying to do." Tr. 75:20-22 (Mr. Klager). According to Mr. Klager, the last run date is "updated every time we have a transaction. . . . So it is the last time that we had a lease pur[chase] recorded on that particular lease, but just because yesterday was the last time that I purchased doesn't mean that today I don't have a standing offer." *Id.* at 75:13-19; *see also* Tr. 124:12-22 (colloquy between Mr. Klager and Mr. Godfrey (pl.'s counsel)) (testifying that if a deal expires, there might be another deal that follows it and extends it).

Defendant's contention that Koch did not have "any set way" of designating inactive leases, Def.'s Br. 24, is not supported by Mr. Klager's testimony. Although Mr. Klager testified that there was no "written procedure or a checklist" for inactivating leases, Tr. 102:22-24 (Mr. Klager), he repeatedly stated that Koch would remove the inactive lease's ownership, zero out the price codes, Tr. 73:15-21, 130:13-17, 131:2-9 (Mr. Klager); Tr. 102:1-13, 136:12-17 (colloquy between Mr. Klager and Mr. Godfrey (pl.'s counsel)), and "potentially put a comment in saying [Koch] had lost the lease,"⁸⁰

⁸⁰ Plaintiff also contends that defendant misrepresents Mr. Klager's discussion of the methods Koch employs to indicate inactive leases. Pl.'s Resp. Br. 8. After explaining that Koch would remove lease ownership and assign zeros to price codes, Tr. 73:18-21 (Mr. Klager); *see id.* at 102:5-11, Mr. Klager stated: "Sometimes there would be a comment we would type in the lease master that would say 'lost lease' on a cer[tain] date, a preform comment. It wasn't anything that would be reliable," *id.* at 73:24-74:3; *see id.* at 102:11-13. According to defendant, Mr. Klager testified that "[t]here were several potential fields that [Koch] might alter" to indicate an inactive lease, "which may or may not be 'reliable.'" Def.'s Br. 23 (quoting Tr. 74:2-3 (Mr. Klager)). Mr. Klager's statement referring to reliability appears in context to describe only

Tr. 102:1-13 (colloquy between Mr. Klager and Mr. Godfrey (pl.'s counsel)); see Tr. 73:15-21 (Mr. Klager). Mr. Klager explained that what he was describing was "what [Koch] practiced." Tr. 102:18-19 (Mr. Klager). The court does not find Koch's procedures for designating inactive leases deficient in any way that is material to the determination of plaintiff's damages. Defendant's contention that "Koch's data had demonstrated errors" in its identification of inactive leases, Def.'s Br. 24, is similarly not supported by the facts testified to at trial. At trial, Mr. Martin admitted that the Farmland lease was "the only lease" he found within the Koch Top 50 Lists as to which "Koch had no contractual right to purchase oil from the lease." Tr. 591:22-592:2 (colloquy between Mr. Martin and Mr. Godfrey (pl.'s counsel)).

Nor does the court find helpful to the resolution of the issue of damages the documents referenced by Mr. Martin and defendant that indicate that leases not represented in the Koch Top 50 Lists remained in active status after contract termination. See DX 2722 (internal Koch memos and letters); Martin Supp. Rpt. ¶ 30; Def.'s Br. 23-24. In particular, Mr. Klager's cross-examination testimony contradicted defendant's conclusion that an offer could exist for oil after contract termination. See generally Tr. 132:8-143:13 (Mr. Klager). For example, Mr. Kim (defendant's counsel) referred Mr. Klager to a Koch memo that indicated that some leases had been "removed from contract." DX 2722-0004 (memo), Tr. 132:8-16 (colloquy between Mr. Klager and Mr. Kim (def.'s counsel)). Mr. Klager did not view this information as significant, stating that "[j]ust because a lease was removed from a lease exhibit on a contract doesn't mean that we weren't going to buy off that lease anymore from that producer." Tr. 134:1-16 ((colloquy between Mr. Klager and Mr. Kim (def.'s counsel))). Mr. Kim then directed Mr. Klager further down the memo, which indicated that some leases had not "run for over five years," Tr. 135:8-14 (colloquy between Mr. Klager and Mr. Kim (def.'s counsel)); DX 2722-0004 (memo); defendant asked Mr. Klager whether "this mean[s] the price code should have been zeroed out because of the elapsed time since the last run date[.]" Tr. 135:23-25 (Mr. Kim). Mr. Klager responded: "Not necessarily. I mean, I don't know why the lease wasn't running during those five years. But the fact that it hasn't run for a period of time doesn't mean that we may not be purchasing off of it in the future." Tr. 136:1-5 (Mr. Klager).

preform comments. See Pl.'s Resp. Br. 8. In fact, Mr. Kim (defendant's counsel) elicited the same information on his cross examination of Mr. Klager:

Mr. Kim: I think both on direct and just now . . . you might have said something like the comment field might not be terribly reliable. . . . Did I mishear that?

Mr. Klager: Well, it's just . . . a preformed field, and it didn't have structure to it in the sense that it drove anything. . . . It was for informational purposes.

Tr. 103:12-20 (colloquy between Mr. Klager and Mr. Kim (def.'s counsel)).

Nothing in the defendant's discussion of "outliers" associated with offers made on leases inactive after a "last run date" persuades the court the Koch data fails to provide reasonably accurate representation of the highest offered prices under the 1974 Regulations. Importantly, the prices in the Top 50 Lists were, in accordance with the 1974 Regulations, "offered prices." The 1974 Regulations do not require that an "offered price" be accepted. Plaintiff is entitled to rely on leases that have prices represented in the Koch Top 50 Lists after the last run date as offered prices in calculating damages.⁸¹

B. Oil Royalty Under-Collection: Plaintiff's Gravity-Adjustment Analysis

As plaintiff explains, for "actual purchase prices to be used as offered prices in computing royalty value under the Court's Tranche One rulings, a gravity adjustment must be performed to account for any difference between the gravity of the 'offered price' sale being referenced and the gravity of the royalty oil at issue." Pl.'s Br. 16; see Rebut[t]al Expert Report of Daniel T. Reineke, P.E. (2010 Reineke Rebuttal), Dkt. No. 547, at 1-2. Defendant makes two general arguments with respect to gravity adjustment. First, defendant challenges the reasonableness of Mr. Reineke's gravity-adjustment methodology. Second, defendant argues that the actual 40-degree prices listed in the Koch database, rather than the 40-degree prices Mr. Reineke calculated using the Joint Database gravity scales, should be used for Koch transactions. The court analyzes each of these arguments in turn.

1. Whether Mr. Reineke's Gravity-Adjustment Methodology Is Reasonable

Defendant contends that the evidence at trial supports Mr. Martin's gravity-adjustment methodology, as it is described in his 2009 Report. Def.'s Br. 30. According to defendant, "Mr. Martin's methodology involved building a matrix of the highest price by gravity adjusting prices to the transactional gravity, rather than, as Mr. Reineke did, selecting the highest forty degree price and gravity adjusting such price down to the transactional gravity." Id.

⁸¹ Accordingly, the court finds no reason to employ the "inactive after last run" date as a proxy for offer termination. Moreover, defendant's contention that Koch used the "last run date data as a way of identifying inactive leases," Def.'s Br. 24, is not supported by the testimony of either Mr. Klager or Mr. Martin. Mr. Klager testified that the last run date is "updated every time we have a transaction. . . . So it is the last time that we had a lease pur[chase] recorded on that particular lease, but just because yesterday was the last time that I purchased doesn't mean that today I don't have a standing offer." Tr. 75:13-19 (Mr. Klager); see also Tr. 124:12-22 (colloquy between Mr. Klager and Mr. Godfrey (pl.'s counsel)) (testifying that if a deal expires, there might be another deal that follows it and extends it); Tr. 591:13-21 (colloquy between Mr. Martin and Mr. Godfrey (pl.'s counsel)) (admitting that "in general, purchasers of oil don't cancel their contracts with sellers the very next day after their last purchase of oil").

Plaintiff acknowledges that the methodologies of the experts differ, stating that Mr. Martin created a matrix for each purchase price in the Joint Database “that include[d] an adjusted offered price at every degree of gravity (including 40 degrees), while Mr. Reineke calculated only a 40-degree price and then further adjusted that [price] using the royalty oil purchaser’s gravity scale.” Pl.’s Br. 17 (internal citations omitted). Plaintiff argues, however, that the court did not hear evidence on this issue during the June 30 and July 1, 2010 trial and, “[a]s the court explained in Osage IV, ‘[d]efendant may not now relitigate this issue.’” Pl.’s Resp. Br. 15 (quoting Osage IV, 93 Fed. Cl. at 22).

In Osage IV, the court held that “Mr. Reineke was reasonable in his method of first determining the highest 40-degree price by normalizing purchase prices, and then gravity-adjusting the highest 40-degree price to the actual gravity of the Osage oil being valued for royalty purposes--using the purchaser’s adjustment scale for Osage County.” Osage IV, 93 Fed. Cl. at 22; see Pl.’s Resp. Br. 15; see also supra Part I.C.2 (discussing Osage IV’s gravity adjustment analysis). Moreover, Mr. Martin actually used Mr. Reineke’s methodology--not the matrix-driven methodology he proffers in this case--when he served as an expert for the government in Shoshone. Osage IV, 93 Fed. Cl. at 22; see Pl.’s Resp. Br. 16 (“[B]oth expert witnesses[] [offered] prior testimony that the ‘matrix’ used by Mr. Martin and the Osage Agency was ‘unique’ . . . and contrary to the method used by Mr. Martin in another case.”). In light of the foregoing, the court finds that Mr. Reineke’s gravity-adjustment methodology is reasonable.⁸²

⁸² According to defendant, during trial Mr. Klager “demonstrated that Mr. Martin’s methodology was exactly the type of methodology that a company like Koch would employ in its normal business operations.” Def.’s Br. 30. In a hypothetical where “Koch is purchasing 34-degree oil, and the offer was to be based on the higher of Koch’s Oklahoma [S]weet posting and Sun’s Oklahoma [S]weet posting,” Tr. 153:1-3 (Mr. Kim (def.’s counsel)), Mr. Klager agreed that Koch would calculate the 34-degree price of the oil by “taking the higher of the 34-degree price under Koch’s [Oklahoma Sweet] posting and the higher of the 34-degree price under Sun’s [Oklahoma Sweet] posting,” Tr. 153: 18-22 (colloquy between Mr. Klager and Mr. Kim (def.’s counsel)); see Def.’s Br. 30. Mr. Klager further agreed that “it didn’t matter which one was higher at 40 [degrees].” Tr. 154:6-8 (colloquy between Mr. Klager and Mr. Kim (def.’s counsel)). Mr. Klager’s testimony does not persuade the court to revisit this issue. As plaintiff points out, Pl.’s Resp. Br. 16, in the hypothetical testified to by Mr. Klager, “Koch would not have been calculating royalties using a wide variety of geographically dispersed prices, or applying the Osage Regulations, or estimating damages.”

Defendant also points to testimony by Mr. Reineke, in which he states that he and Mr. Martin employed different gravity-adjustment methodologies, Def.’s Supp. Br. 2; Tr. 310:12-18 (colloquy between Mr. Reineke and Mr. Godfrey (pl.’s counsel)); Tr. 370:22-371:10 (colloquy between Mr. Reineke and Mr. Kim (def.’s counsel)), and that he believed he and Mr. Martin “agreed to disagree about what the appropriate methodology was,” Tr. 373:18-374:2 (colloquy between Mr. Reineke and Mr. Kim (def.’s counsel)); see Def.’s Supp. Br. 2. The court agrees

2. Whether Mr. Reineke's Use of the Gravity-Adjustment Scales from the Joint Database for Koch Transactions Is Reasonable

As discussed above, supra Part I.C.b (discussing Osage IV's analysis of the gravity adjustment issue), because the experts lacked access to "the gravity scales for each and every purchaser for all the timeframes and . . . the 40-degree price for each purchaser," Tr. 309:20-23 (Mr. Reineke), Mr. Reineke and Mr. Martin "determined posted prices and gravity tables from the various pricing bulletins of the major purchasers or published reports of pricing bulletins," Martin Rpt. ¶ 19. For those purchasers that did not have published scales, the experts used a "default scale." Tr. 306:13-20 (colloquy between Mr. Reineke and Mr. Godfrey (pl.'s counsel)); see Def.'s Resp. Supplemental Post-Trial Br. for Trial Beginning June 30, 2010 (Def.'s Resp. Supp. Br.), Dkt. No. 582, at 5 n.4 ("[I]t was precisely because some who qualified as major purchasers . . . did not publish a gravity scale, that the experts needed to agree to a so-called 'default' gravity scale" (internal quotations omitted)). Prior to obtaining access to additional Koch data, see Order of May 5, 2010 at 2 (granting defendant access to additional Koch data), supra Part I.D (discussing court's rulings on pre-trial briefing), the experts applied these gravity scales to each of the transactions in the Joint Database to estimate the 40-degree prices, Tr. 305:19-23 (Mr. Reineke); Tr. 309:16-24 (colloquy between Mr. Reineke and Mr. Godfrey (pl.'s counsel)); 2010 Reineke Rebuttal Rpt. 2; see Tr. 549:1-4 (colloquy between Mr. Martin and Mr. Philpott (def.'s counsel)) (stating that Mr. Martin used these gravity scales in his 2009 Report); Pl.'s Br. Rev. 3 ("[Mr. Reineke] and Mr. Martin were not able to gather the actual gravity scales that would have applied to each transaction[]; therefore they agreed, during the creation of the Joint Data Base, on which gravity scale would apply for each major purchaser in each month at issue.").

Defendant maintains that the newly accessed Koch data validates the contention in Mr. Martin's 2009 Report that Koch did not use the Koch gravity scale contained in the Joint Database for two types of transactional prices: prices that had already been "deemed" 40 degrees and prices derived from the Agency's highest posted price (HPP) letter. Def.'s Br. 29; Martin Supp. Rpt. ¶¶ 36, 37; see Tr. 550:17-551:13 (colloquy between Mr. Martin and Mr. Philpott (def.'s counsel)). Mr. Martin also identifies a third type of transactional price, those in which Koch utilized other purchaser's posted prices. Martin Supp. Rpt. ¶ 38. According to Mr. Martin, the new Koch data provides "additional evidence that many of the transactions were not as a result of bonuses being paid, but were . . . based on another purchaser's posted price for which no gravity adjustment was applicable." Id. ¶ 37; see Def.'s Resp. Br. 19 n.16 (stating that it is "inappropriate to use Koch's gravity scale to calculate a 40[-degree] price" for

with plaintiff that the fact "[t]hat Mr. Reineke did not argue with Mr. Martin about his methodology, which was inconsistent with what was done in Tranche One, is not a concession that Tranche One never occurred." Pl.'s Resp. Rev. 4.

transactions “based on another purchaser’s posted prices (and gravity scales)”). Mr. Martin maintains that he “did not have enough information available to [him] at the time of the [2009] Report to identify these instances.” Martin Supp. Rpt. ¶ 38.

Defendant argues that, because the new Koch data includes “actual, historical Koch 40[-degree] prices” for Koch leases, Def.’s Br. 29, employing the “actual 40[-degree] prices listed in the Koch database,” Martin Supp. Rpt. ¶ 35; see id. ¶ 9, results in “the most accurate calculation possible for determining the 40[-]degree price,” Tr. 549:22-25 (Mr. Martin); see Def.’s Supplemental Post-Trial Br. for Trial Beginning June 30, 2010 (Def.’s Supp. Br.), Dkt. No. 580, at 4 (“Koch obviously was not using the gravity scale associated with its posting contained in the Joint Data[b]ase.”). During trial, Mr. Martin referred to Exhibit S of his Supplemental Report to support his contentions. Tr. 551:14-552:8 (colloquy between Mr. Martin and Mr. Philpott (def.’s counsel)); DX 2725 (Ex. S-1); DX 2726 (Ex. S-2). Exhibit S-1 includes a list of leases that Mr. Martin had identified as HPP leases and had provided to Mr. Reineke for review. Tr. 551:18-19 (Mr. Martin). Mr. Martin testified that he took the Koch Top 50 prices and looked at the leases he had listed in Exhibit S-1 “to determine what the correct 40-degree price would have been.” Tr. 551:23-552:2 (Mr. Martin); DX 2725 (Ex. S-1). With respect to Exhibit S-2, which appears to consist of a list of deemed leases, Mr. Martin stated that he “did the same type of analysis for those leases that [he] identified as deemed leases in [his] 2009 [R]eport.” Tr. 552:6-8 (Mr. Martin); DX 2726 (Ex. S-2). Similarly, for Exhibit S-3--which consists of a list of leases that allegedly rely upon other purchasers’ posted prices--Mr. Martin “put[] Koch’s 40[-]degree price from their [T]op 50 into Mr. Reineke’s database.” Tr. 552:10-14 (Mr. Martin); DX 2727 (Ex. S-3). Defendant estimates that using the Koch 40-degree prices for Koch transactions--rather than the 40-degree prices calculated by Mr. Reineke using the gravity scales in the Joint Database--would reduce plaintiff’s damages claim by \$1.4 million.⁸³ Def.’s Br. 29; Martin Supp. Rpt. ¶¶ 9, 35.

Plaintiff counters that defendant’s “bald assertion” that “Mr. Martin’s ‘deeming’ and ‘HPP’ gravity-adjustment arguments are vindicated by the Koch 40-degree pricing data” is “without support or explanation.” Osage Nation’s Resp. Br. Regarding Revised Tr. (Pl.’s Resp. Rev.), Dkt. No. 583, at 4; see Pl.’s Resp. Br. 15. According to plaintiff, “Mr. Reineke did not ‘manufacture’ any ‘artificial’ prices,” rather “he applied the agreed-

⁸³ In its brief, defendant acknowledges an error in Mr. Martin’s analysis of this issue that was identified by Mr. Reineke during trial. Def.’s Br. 29; see Tr. 549:12-18 (Mr. Martin) (describing his analysis); Tr. 353:17-354:11 (colloquy between Mr. Reineke and Mr. Godfrey (pl.’s counsel)) (explaining the error in Mr. Martin’s analysis). Although Mr. Martin assumed that the Koch 40-degrees prices “were not subject to any gravity adjustments for sales of lower gravity oil,” he nonetheless adjusted for gravity, “incorrectly lowering these prices.” Pl.’s Resp. Br. 15 n.5; see Def.’s Br. 29 (stating that the error was “due to a fundamental difference in the gravity[-]adjustment methodologies used by the two experts”); Tr. 354:12-354:15 (Mr. Reineke) (referring to the \$200,000 discrepancy).

to gravity scales to estimate a 40-degree price because the Osage Agency did not collect the gravity scales associated with purchases.” Pl.’s Resp. Br. 14. Because both of these arguments were previously rejected by the court for lack of evidence, see Osage IV, 93 Fed. Cl. at 21-22, plaintiff contends “they must likewise be rejected here.” Pl.’s Resp. Rev. 4; see Pl.’s Resp. Br. 14 (“Nothing in the new data relied on by Mr. Martin renders this consistent approach suddenly unreasonable.”). Although plaintiff does not specifically address defendant’s identification of a third transactional price--those in which Koch utilized other purchaser’s posted prices--the court understands plaintiff to be incorporating this issue into its HPP and deeming counterarguments. See Pl.’s Resp. Rev. 4 (claiming that Mr. Martin’s deeming and HPP gravity adjustment arguments are “inherently confusing”).

Plaintiff maintains that both Mr. Martin and Mr. Reineke “have consistently used these agreed-to gravity scales to calculate gravity-adjusted offered prices using the purchase prices of major purchasers in the Joint Database.” Pl.’s Br. 16; see Pl.’s Resp. Br. 14. According to plaintiff, the experts agreed on these gravity scales, “knowing that those scales variously would either overstate or understate actual figures, but also knowing that the task at hand was to calculate a reasonable estimate using data that would never be complete.” Pl.’s Resp. Rev. 3. Plaintiff contends that, despite Mr. Martin’s and Mr. Reineke’s previous agreement that “it was reasonable to adjust all 16 major purchasers’ prices in the Joint Database using the agreed-to gravity scales, Mr. Martin now argues that the Osage Nation must use these scales only for 15 of the major purchasers.” Pl.’s Br. 17 (emphasis in original); see Pl.’s Resp. Rev. 3. Plaintiff argues that it is mere happenstance that the Koch 40-degree prices favor defendant and that, if other purchasers’ 40-degree prices were available, those prices would favor plaintiff. Pl.’s Br. 17. Plaintiff cites Mr. Reineke for support of this proposition:

Mr. Martin’s use of Koch 40-degree prices for Koch’s purchases in Osage County when he is still using the [J]oint [D]atabase gravity scales for all other purchasers skews the gravity adjustments in favor of the United States. If 40-degree price data were available for all major purchasers in the [J]oint [D]atabase, so that Mr. Martin’s new approach could be applied consistently, it is likely that prices from one or more of those other purchasers would offset the changes in Koch prices Mr. Martin is making.

Id. at 2 (quoting 2010 Reineke Rebuttal).

In its Response, defendant claims that “[p]laintiff’s entire argument in this regard is premised on a fundamental misunderstanding.” Def.’s Resp. Br. 18. According to defendant, the parties never agreed “how to use the agreed-to gravity scales” nor “[to] which transactions these could be applied.” Id.; see also Tr. 548:23-25 (Mr. Martin) (claiming that he and Mr. Reineke did not reach an agreement about how any particular data would be used, but that they did agree on what data they would collect). Instead,

defendant maintains that “[t]he agreement reached about gravity scales in the Joint Data[b]ase was simply as to the posted gravity scales . . . for each major purchaser for each period of time covered by the Joint Data[b]ase.” Def.’s Resp. Supp. Br. 5. Defendant further claims that “a purchaser need not make all of its offers based on its then current posting,” *id.*, and Mr. Reineke appears to have so testified during trial, *see* Tr. 309:25-310:8 (colloquy between Mr. Reineke and Mr. Godfrey (pl.’s counsel)) (stating that a purchaser’s gravity scale and 40-degree price “varies transaction by transaction”). Defendant concludes that “[t]here is nothing reasonable about refusing to account for this known reality, when available evidence either suggests or proves that to not do so creates errors.” Def.’s Resp. Supp. Br. 5; *see* Def.’s Supp. Br. 4 (“Koch obviously was not using the gravity scale associated with its posting contained in the Joint Data[b]ase.”).

Defendant disagrees with plaintiff’s contention that the experts’ use of the gravity scales has been consistent. Def.’s Resp. Br. 18. Defendant maintains that “Mr. Martin has consistently said that he would use an agreed-to gravity scale to calculate gravity-adjusted offered prices using the purchase prices of major purchasers in the Joint Database only if he had no better data and no basis to conclude otherwise.” *Id.* at 18-19 (emphasis in original) (internal citations and quotations omitted). Although Mr. Martin used the Joint Database gravity scales in his 2009 Report, he has found “more accurate data from the Koch [T]op 50 [Lists],” Tr. 549:1-7 (colloquy between Mr. Martin and Mr. Philpott (def.’s counsel)), which allowed him to “simply substitute[] the 40[-]degree price that Koch had for Osage leases into Mr. Reineke’s model instead of the 40[-] degree price that [Mr. Reineke] calculated [from the Joint Database gravity-adjustment scales],” Tr. 549:15-18 (Mr. Martin); *see supra* note 83 (discussing an acknowledged error in Mr. Martin’s analysis).

Plaintiff contends that if other purchasers’ 40-degree prices were available, those prices would offset the Koch prices or even favor plaintiff. *See* Pl.’s Br. 17 (“[O]dds are that if similar data were available for another major purchaser, the data would go the other way.”); 2010 Reineke Rebuttal 2 (“If 40-degree price data were available for all major purchasers in the[J]oint [D]atabase . . . , it is likely that prices from one or more of those other purchasers would offset the changes in Koch prices Mr. Martin is making.”). The court does not agree with defendant’s suggested inference that Mr. Reineke should have sought this additional data from other purchasers. *See* Def.’s Supp. Br. 5 (referring to other purchasers’ 40-degree data that Mr. Reineke “did not even bother to try to get”). “[T]o the extent that the difficulty in determining the amount of loss suffered by the Tribes is attributable to improper accounting procedures followed by the BIA, the consequences of those difficulties should not be visited upon the Tribes.” *Warm Springs*, 248 F.3d at 1375. Mr. Reineke testified that the 40-degree price he calculated using the Joint Database gravity-adjustment scales is “[s]ometimes . . . higher [and] sometimes . . . lower” than the Koch 40-degree price. Tr. 311:21-22 (Mr. Reineke); *see* Pl.’s Br. 17 (“Some of [Mr. Reineke’s] normalized price estimates for Koch transactions in the[J]oint

[D]atabase [using the agreed-to scale] are lower than the Koch 40[-]degree price that Mr. Martin used, and some are higher.” (internal quotations omitted) (brackets in original)).

It is undisputed that the Joint Database gravity-adjustment scales were used by Mr. Reineke to estimate the 40-degree prices of transactions to calculate damages. Tr. 309:16-24 (colloquy between Mr. Reineke and Mr. Godfrey (pl.’s counsel)); see Tr. 311:1-8 (Mr. Reineke) (stating that his derivation of the 40-degree price is “not exact” and is “an estimate”). Whether or not any agreement existed between the experts regarding the use and application of the Joint Database gravity-adjustment scales prior to the identification of the Koch 40-degree prices does not appear to the court to govern this dispute. The court finds it appropriate that the 40-degree prices Mr. Martin identified in the Koch database should be applied in the calculation of damages based on the Koch Top 50 List prices, but not otherwise. The court does not find that damages based on prices outside the Koch Top 50 Lists should be readjusted. The government, which did nothing to assist plaintiff in developing the Top 50 List information or any other information about offered prices by major purchasers, may not now use the Koch information to reduce plaintiff’s damages based on the Joint Database. Accordingly, the parties shall calculate damages using the 40-degree prices that are found in the Koch database for Koch Top 50 List transactions and otherwise shall calculate damages based on the 40-degree prices calculated by Mr. Reineke using the Joint Database gravity-adjustment scales.⁸⁴

C. Investment Under-Performance: Plaintiff’s Reliance on the Andersen Report to Estimate Interest Credits Owed to the Tribe

⁸⁴ The court agrees with plaintiff that some of defendant’s arguments are confusing. See Pl.’s Resp. Rev. 4. For example, the court is unclear as to whether the \$1.4 million reduction in plaintiff’s damages proposed by Mr. Martin, Martin Supp. Rpt. ¶¶ 9, 35; see note 83 and related text (discussing \$1.4 million calculation), results from transactional prices that Mr. Martin has identified as based on HPP, prices already deemed 40 degrees, and/or prices based on other purchasers’ postings. The court cannot ascertain whether Mr. Martin’s proposed \$1.4 million reduction includes only these three types of prices or whether additional types of prices are included. Exhibit R to the Martin Supplemental Report, which consists of 891 pages of data, purports to contain a comparison of Koch 40-degree prices and the 40-degree prices calculated by Mr. Reineke but does not provide any calculation that indicates the overall impact of this data on plaintiff’s damages. See DX 2724 (Ex. R). Exhibits S-1 (HPP), S-2 (deeming), and S-3 (other purchasers’ postings) of the Martin Supplemental Report appear to consist of sample data from Exhibit R but, again, fail to quantify their respective impacts on plaintiff’s damages. See DX2725 (Ex. S-1); DX 2726 (Ex. S-2); DX 2727 (Ex. S-3).

The court therefore directs the parties to calculate damages for Koch transactions from the Koch Top 50 Lists using the 40-degree prices that are found in the Koch database unless it is clear from information in the Koch data quoted in testimony or exhibits and described in briefing that another 40-degree price controls for a particular Koch Top 50 offer.

As the court explained in Osage IV, defendant disputes plaintiff's calculation of the amount of interest credited to the Tribe for FY 1973 to FY 1977. Osage IV, 93 Fed. Cl. at 32; see supra Part I.C.2 (discussing Osage IV's analysis of interest credits). Plaintiff's calculation is based on the figures contained in the Andersen statements of account. Osage IV, 93 Fed. Cl. at 32; see also supra note 23 (explaining Andersen statements of account); supra Part I.C.2 (discussing Osage IV's analysis of interest credits). Defendant argues that plaintiff failed to include \$22,737.79 in U.S. Treasury/Overnighter interest, \$860,416.86 in CD and Government Security and \$59,783.71 in Other interest--for a total of \$942,938.36 in additional interest credits. See Supplemental Expert Report of Gregory J. Chavarria (Chavarria Supp. Rpt.), Dkt. No. 526, Schedule 1A; see Osage IV, 93 Fed. Cl. at 32.

The Andersen Report was provided to the Tribe as a "reasonable estimate of the data the Osage Tribe would have obtained had data been available from BIA records." Osage II, 72 Fed. Cl. at 670 (internal citations and quotations omitted); see supra Part I.B.2 (discussing Osage II's analysis of Andersen Report); Part I.C.2 (discussing Osage IV's analysis of Andersen Report). At the November 2009 hearing, Mr. Chavarria agreed that the "purpose in reporting the results of th[e] Andersen Project was to provide a fair and objective report of the state and history of the[] trust accounts for the years in question" and that the report and its analysis were not intended to be "systematically skewed in favor of either the Tribe or the government." Nov. 10, 2009 Tr. 28:11-19 (Mr. colloquy between Mr. Chavarria and Mr. Godfrey (pl.'s counsel)); see supra Part I.C.2 (discussing November 2009 hearing).

The Andersen Report attempted to reconcile the Osage Tribal Trust accounts for the period from July 1, 1972 (FY 1973) through September 30, 1992 (FY 1992). PX 476-0003 (Arthur Andersen, U.S. Department of the Interior, Bureau of Indian Affairs, Tribal Trust Funds Reconciliation Project, Agreed-Upon Procedures and Findings Report for Osage Nation of Oklahoma, July 1, 1972 Through September 30, 1992) (Andersen Rpt.)). Arthur Andersen applied different, and sometimes overlapping, reconciliation and certification procedures for this twenty-year time period, depending upon the information available to it. PX 476-0003-0006 (Andersen Rpt.); PX 513-0018-0022 (United States General Accounting Office [(GAO)], Report to the Committee on Indian Affairs, U.S. Senate, Financial Management, BIA's Tribal Trust Fund Account Reconciliation Results, May 1996 (GAO Report or GAO Rpt.)); Tr. 214:14-215:7 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.'s counsel)). For example, for FY 1992, Arthur Andersen reconciled BIA cash transactions reported by the United States Department of the Treasury (Treasury) to reports submitted to the Treasury and to BIA's Finance System, an electronic database used to perform both tribal and general ledger trust fund accounting. PX 476-0005 (Andersen Rpt.); PX 513-0020-0021 (GAO Rpt.); see Tr. 254:22-25 (colloquy between Mr. Chavarria and the court) (confirming that the Finance System was instituted in 1972 or 1973). Fiscal year 1992 appears to be the only year with respect to which Arthur Andersen relied upon "source documents," such as bank statements or receipts from a bank, from sources that are external to the Department of

the Interior (Interior). See Tr. 219:15-220:10 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.'s counsel)) (defining "source documents"); id. at 210:20-211:1 (analogizing Treasury to a bank with respect to its relationship to Interior); id. at 231:25-232:12 (discussing Arthur Andersen's reliance on Treasury records for FY 1992).

For the remaining nineteen years of the twenty-year time period, 1972-1992, Arthur Andersen examined information from records internal to Interior. For FY 1986 through FY 1991, Arthur Andersen conducted basic reconciliation of individual account transactions by verifying investment transactions. PX 476-0004 (Andersen Rpt.); PX 513-0018-0019 (GAO Rpt.); Tr. 216:18-217:17 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.'s counsel)). The GAO Report indicated and Mr. Chavarria testified that, because of efficiency concerns and time and monetary constraints, BIA directed Arthur Andersen to cease its verification of detailed individual transactions and to review "investment yields" instead. PX 513-0019 (GAO Rpt.); Tr. 217:12-218:3 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.'s counsel)).

Arthur Andersen subsequently employed analyses for FY 1978 through FY 1992 that consisted of an "investment yield" analysis--which "compare[d] the [T]ribes' interest earnings to the BIA benchmark rate"--and a Treasury interest analysis--which "recalculated interest earnings on tribal investments in overnight Treasury deposits and compared interest received by [T]ribes to the applicable Treasury rate." PX 513-0019 (GAO Rpt.); see PX 476-0004-0005 (Andersen Rpt.) (explaining that Arthur Andersen applied the investment yield analysis and Treasury interest analysis for FY 1978 through FY 1992); Tr. 218:16-23 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.'s counsel)) (discussing investment yield analysis); id. at 227:12-228:1 (discussing Treasury interest analysis). Because "[g]eneral ledger income/cost codes needed to determine whether a transaction is interest[-]related were not available for years prior to [f]iscal [y]ear 1978," PX 476-0004 (Andersen Rpt.), Arthur Andersen did not employ either an investment yield analysis or a Treasury interest analysis for FY 1973 through FY 1978, id. at 0004-0005; see Nov. 10, 2009 Tr. 27:11-22 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.'s counsel)); Nov. 10, 2009 Tr. 120:20-121:7 (colloquy between Mr. Chavarria and Mr. Kim (def.'s counsel)). Instead, for FY 1973 through FY 1977, Arthur Andersen relied only on BIA's Finance System to generate the Andersen statements of account. Tr. 211:6-20 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.'s counsel)); see JX 150 (Andersen statements of account).

Plaintiff recognizes that the Andersen Report is imperfect, but points out that "[t]he Andersen Report was presented to the Osage Nation as the best that could be done, given the United States' unwillingness to spend the time and money necessary for a better review." Pl.'s Br. 19; see also Pl.'s Br. 22 ("The Andersen Report is the only accountant-generated analysis of the trust fund as a whole that Interior has provided to the Osage Nation."). Plaintiff explains that the Osage Nation has litigated on the basis of the Andersen Report "because it does not have the resources to revisit the massive amounts of entirely disorganized records that have been provided, or to litigate discovery disputes

over those that have not been provided.” Pl.’s Br. 19. Moreover, plaintiff contends that it “is the beneficiary’s prerogative under Warm Springs and other trust law precedents” to rely on the report that the government, as trustee, has provided. Id.; see id. at 21. Plaintiff asks, rhetorically, whether--in the trust context--the trustee can partially revise its admittedly incomplete report (on which the beneficiary has relied) in a way that benefits only the trustee:

whether a damages estimate based on the trustee’s own report to the beneficiary can be defeated by the trustee, where (1) the trustee presented the report to the beneficiary in lieu of a trust accounting; (2) the trustee deliberately left large systemic gaps in the report over the beneficiary’s objections; and (3) the trustee’s litigating position still fails to address the gaps in the investment analysis as a whole, and instead focuses on revising only a selected group of transactions that would provide it a net benefit.

Id. at 20.

Defendant’s argument for revisiting the interest issue is that, for FY 1973 to FY 1977, the Andersen statements of account “did not reliably classify interest as any of the three components used by [p]laintiff [(Treasury or Overnighter Interest, Interest on CDs and Interest on Government Securities)], but instead often classified such receipts simply as ‘other’ receipts.” Def.’s Br. 5; see Osage IV, 93 Fed. Cl. at 32-34. Of course, this assertion assumes the resolution--in the government’s favor--of the factual question at issue: that “such receipts” were “often classified . . . simply as ‘other’ receipts.” See Def.’s Br. 5. Defendant states that the “general ledger income/cost codes were not uniformly used for all the various tribes making up the TRP project until [FY] 1978,” and that, therefore, Arthur Andersen only had available to it some of the data needed to conduct its interest recalculation prior to FY 1978. Id. For this reason, defendant contends, “one needs to look beyond the [Andersen] Statements of Accounts’ summary pages and investigate the ‘other’ receipts in the supporting detail for those account statements.” Id. Defendant states that “this more exhaustive analysis had not been done as part of the TRP simply for reasons of time and cost.” Id. at 6. Defendant contends that, “in a manner consistent with the analysis done in the TRP for fiscal years 1978-92[,] . . . Mr. Chavarria has now undertaken at least some of this time-consuming analysis.” Id. Defendant further states that plaintiff’s “figures were simply determined by looking only at the ‘first page of each Statement of Account.’” Id. at 6-7. Of course, “the first page of each Statement of Account” is where the relevant information provided by the trustee in the Andersen Report to the Tribe could be found. See supra note 23 (explaining Andersen statements of account). Defendant also states that “it is undisputed that the ‘first page of each Statement of Account’ may not have classified all of the interest actually credited to the Tribe during these specific fiscal years.” Id. at 7. The Andersen Report, limited by defendant as trustee for “reasons of time and cost,” id. at 6, is not complete.

Defendant, as trustee in breach, is not entitled to employ its vast resources to cherry pick data that is entirely favorable to the government. Although defendant had previously imposed “time and cost” constraints upon Arthur Andersen’s TRP, defendant has now authorized Mr. Chavarria to undertake “at least some of this time-consuming analysis” “[g]iven the claims raised in this litigation.” *Id.* at 6. It appears now, as it appeared to the court in Osage IV,

that while plaintiff has repeatedly pressed the government for a more complete accounting of the tribal trust records for the Osage and other tribes, the government has refused on the grounds that such exercises would not be cost-effective. However, now that performing a more thorough analysis of the data may financially benefit the government, it has picked a few of the gaps in the investment analysis where it thinks it can gain some ground, and revise[d] those based on a small selection of documents that [Arthur] Andersen was told not to analyze [when preparing the Andersen Report].

Osage IV, 93 Fed. Cl. at 34 (internal quotations and citations omitted).

In the past, defendant offered plaintiff the Andersen Report as a “reasonable estimate” of the trust accounts in the absence of proper accounting. *Id.* at 26; see *supra* Parts I.B.2 (discussing the analysis of the Andersen Report in Osage II) and I.C.2 (discussing the analysis of the Andersen Report in Osage IV). Plaintiff relied upon the Andersen Report, which was intended “to provide a fair and objective report of the state and history of the[] trust accounts for the years in question,” Nov. 10, 2009 Tr. 28:11-19 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.’s counsel)), and lacks the resources to continue to litigate with respect to accounting records that defendant has failed to provide, see Pl.’s Br. 19 (stating that plaintiff “does not have the resources to revisit the massive amounts of entirely disorganized records that have been provided, or to litigate discovery disputes over those that have not been provided”).

Even if plaintiff did possess a wealth of resources, “to the extent that the difficulty in determining the amount of loss suffered by the Tribes is attributable to improper accounting procedures followed by the BIA, the consequences of those difficulties should not be visited upon the Tribes.” Warm Springs, 248 F.3d at 1375. Further, trust law prohibits a trustee in breach from benefiting from its failure to maintain accounting records by relying upon data that entirely favors the trustee. Osage IV, 93 Fed. Cl. at 35; see 3 Austin W. Scott et al., Scott and Ascher on Trusts § 17.4, at 1186-87 (5th ed. 2007) (“The trustee . . . should gain no advantage from failing to keep proper records.”). As the court found in Osage IV, at this late date, it would be unfair to “place the beneficiary in the position of either (a) accepting a systematically skewed revision of the trustee’s prior, objective report, or (b) revisiting the entire documentary record to perform for itself the

investment analysis the trustee has refused to perform, where some of the documents apparently were not previously produced to it.” Osage IV, 93 Fed. Cl. at 35.

Moreover, the court finds that the Andersen statements of account offer a more reasonable and accurate estimate of interest credited to defendant than does Mr. Chavarria’s new analysis. Contrary to defendant’s contention that plaintiff “has failed to present any evidence regarding interest credits for fiscal years 1973-77,” Def.’s Br. 4, plaintiff presented as evidence the Andersen statements of account--from which its figures are taken without modification--and the testimony of Mr. Chavarria⁸⁵ regarding the creation of the Andersen Report, see Pl.’s Resp. Br. 16. The Andersen statements of account for accounts 7386 and 7886 report that \$0.00 was credited in FY 1973, \$0.00 was credited in FY 1974, \$0.00 was credited in FY 1975, \$281,829.77 was credited in FY 1976, \$88,484.58 was credited in FY 1976Q, and \$402,099.84 was credited in FY 1977. JX 150-0001 (FY 1973), JX 150-0025 (FY 1974), JX 150-0061 (FY 1975), JX 150-0106 (FY 1976), JX 150-0152 (FY 1976Q), JX 150-0166 (FY 1977); accord Chavarria Supp. Rpt. Schedule 1A (listing “Plaintiff’s Cash-Basis Interest Postings”); see Nov. 10, 2009 Tr. 35:6-23 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.’s counsel)) (agreeing that the figures contained in Column A of Mr. Chavarria’s Schedule 1A, representing the interest totals claimed by plaintiff, match the interest totals on the Andersen statements of account).

As plaintiff correctly observes, “the transactions that the United States now claims are interest credits were affirmatively treated in the Andersen [R]eport as not interest—that is, as ‘other receipts.’” Pl.’s Br. 25. Plaintiff further notes that it is also true that this “other receipts” category in the Andersen Report was “exclusive of the transactions that are categorized as ‘Interest on CDs’ or ‘Interest on Government Securities’ or ‘Treasury Interest.’” Pl.’s Br. 26; see JX 150-0001 (FY 1973), JX 150-0025 (FY 1974), JX 150-0061 (FY 1975), JX 150-0106 (FY 1976), JX 150-0152 (FY 1976Q), JX 150-0166 (FY 1977) (listing “Treasury Interest,” “Interest on CDs,” “Interest on Government Securities” and “Other” under a “Receipts” heading). Mr. Chavarria testified that “other receipts” represented a “catch-all category that Arthur Andersen used to label transactions that could not be specifically described,” and that, as far as Mr. Chavarria knew, “could have included non-investment income from tribal assets.” Nov. 10, 2009 Tr. 37:5-14 (colloquy between Mr. Chavarria and Mr. Godfrey (plaintiff’s counsel)).

⁸⁵ Defendant asserts that “if [p]laintiff was truly concerned about hearing about different analyses, . . . [p]laintiff could have presented some witness of its own, other than ‘a witness identified with an adverse party’ under Rule 611(c) of the Federal Rules of Evidence.” Def.’s Br. 8. Plaintiff rightly responds: “The United States faults the Osage Nation for making its case through an adverse witness, but it is only the United States that has assured through litigation that the person it has identified as having the most knowledge of the Andersen Report is adverse to the beneficiary.” Pl.’s Resp. Br. 17 (citation omitted).

At the November 2009 hearing, when questioned by Mr. Godfrey (plaintiff's counsel) about the Andersen Report, the preparation of which Mr. Chavarria had supervised, id. at 11:4-8, Mr. Chavarria testified regarding the limitations Arthur Andersen faced in working with the Interior accounting systems:

Mr. Godfrey: And you reported [in PX 476] . . . that, "General ledger income/cost codes needed to determine whether a transaction is interest related were not available for years prior to fiscal year 1978 and therefore interest receipts could not be identified for comparison, isn't that right?"

Mr. Chavarria: Yes.

Mr. Godfrey: And so you determined it was not practicable to reconstruct historical investment transactions for years prior to fiscal year 1978, right?

Mr. Chavarria: Yes.

Id. at 27:11-22. Mr. Chavarria also testified that "weaknesses in [the BIA] accounting systems and internal control procedures" existed that were "so pervasive and fundamental as to render the accounting systems unreliable." Id. at 30:9-21 (discussing PX 277 (1989 Audit)); see also PX 086-0001⁸⁶ (August 16, 1982 letter from the Comptroller General of the United States to the Secretary of the Interior) (stating that the comptroller general's then-recent review had uncovered "serious design and operating problems" in the BIA accounting system); Nov. 10, 2009 Tr. 18:22-19:11 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.'s counsel)) (discussing PX 086-0001). Mr. Chavarria agreed that he had no reason to believe that the accounting system for the Osage trust funds was any better for FY 1973 through FY 1977. Nov. 10, 2009 Tr. 30:22-31:1 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.'s counsel)). One of the problems Mr. Chavarria noted was that the BIA accounting system reported investment transactions that had not occurred. Id. at 31:2-13. Yet, as an expert witness for the government in this case, Mr. Chavarria reaches conclusions in which he identifies particular postings that should be classified as interest, based on the same information Arthur Andersen characterized during its reconciliation project as insufficient to make the very same conclusions. See Pl.'s Resp. Br. 18.

Specifically, Mr. Chavarria concludes that the amounts in Columns B, C and D of Schedule 1A represent interest--conclusions based on similarities associated with certain transactions found in the Arthur Andersen database. See Tr. 262:3-41 (colloquy between

⁸⁶ The court provided the parties with judicial notice of this previously admitted exhibit in its Order of Dec. 9, 2010 at 9. See 2006 Tr. 922:25 (court) (admitting PX 086-0001 into evidence); Nov. 10, 2009 Tr. 17:8-19:15 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.'s counsel)) (discussing PX 086); Tr. 20:22-21:13 (colloquy between the court, Mr. Godfrey (pl.'s counsel) and Mr. Kim (def.'s counsel)) (consenting to the use of exhibits used during the November 10, 2009 hearing); see also supra note 20 (discussing court's use of judicial notice in this Opinion).

Mr. Chavarria and Mr. Kim (def.'s counsel)) (discussing Column B); Nov. 10, 2009 Tr.146:11-20 (colloquy between Mr. Chavarria and Mr. Kim (def.'s counsel)) (discussing Column C); Nov. 10, 2009 Tr. 43:7-13 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.'s counsel)) (discussing Column D⁸⁷). According to Mr. Chavarria, transactions falling in each of the Columns B, C and D (U.S. Treasury/Overnight Interest, CD and Government Security Interest and Other Interest, respectively) have in common the presence of the number 10290 in the account field and the letters AW as a prefix in the document description field. See DX 2703-0023 (U.S. Treasury/Overnighter Chart), DX 2703-0024-0027 (CD and Government Security Chart) and DX 2703-0028 (Other Chart). Mr. Chavarria contends that AW "is a reference commonly used for investment transactions," Tr. 262:17-20 (Mr. Chavarria), and that 10290 "is an account used primarily for interest received," Nov. 10, 2009 Tr. 126:16-19 (Mr. Chavarria). The presence of AW and 10290 appear to be the only distinguishing characteristics of Column D (Other). See DX 2703-0028 (Other Chart). Mr. Chavarria testified that he was unable to classify the interest in Column D as either U.S. Treasury/Overnighter Interest or CD and Government Security Interest because the transactions in Column D lack the additional distinguishing features represented in Columns B and C. Nov. 10, 2009 Tr. 169:1-6 (Mr. Chavarria); see id. at 168:12-21, 194:11-195:16 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.'s counsel)); Tr. 281:1-5 (Mr. Chavarria).

Mr. Chavarria also points to element component code 9701, which he identifies as "the code that identifies overnight or Treasury interest," Tr. 262:15-17 (Mr. Chavarria), as additional evidence that certain transactions in the Arthur Andersen database represent U.S. Treasury/Overnighter Interest (Column B), see Nov. 10, 2009 Tr. 38:5-9 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.'s counsel)); DX 2703-0023 (U.S. Treasury/Overnighter Chart). As support for his characterization of code 9701, Mr. Chavarria refers to DX 2703-0040, an "Element Component Definition Table used by Arthur Andersen in generating account statements," Tr. 265:4-8 (Mr. Chavarria), which classifies 9701 as "Overnight Interest," id. at 265:11-12; DX 2703-0040.

"Mr. Chavarria's after-the-fact accounting relies on codes assigned contemporaneously to transactions by the Department of the Interior"--specifically the code 9701 and the code prefix AW. See Osage IV, 93 Fed. Cl. at 36. At the November 2009 hearing, Mr. Chavarria testified that these codes are not necessarily reliable:

Mr. Godfrey (plaintiff's counsel): And so you knew as part of the Andersen Project that a code of 9701 was not necessarily a reliable

⁸⁷ Although the transcript of the November 10, 2009 hearing indicates that Mr. Godfrey (plaintiff's counsel) is referring to Column B, Nov. 10, 2009 Tr. 43:7-12 (Mr. Godfrey), it is clear from the context of the testimony that Mr. Godfrey is actually referring to Column D, see Nov. 10, 2009 Tr. 42:18-25 (colloquy between Mr. Chavarria and Mr. Godfrey).

indicator that a transaction was overnighter interest or statutory interest, right?

Mr. Chavarria: Based on this, there was an exception, so not for every answer, yes, so yes.

Mr. Godfrey: So it wasn't reliable in every case, correct?

Mr. Chavarria: Yes.

Nov. 10, 2009 Tr. 42:9-17 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.'s counsel)) (referring to PX 476-0029). Regarding the AW prefix, Mr. Chavarria testified:

Mr. Godfrey: You don't know what AW stands for, do you, those two letters?

Mr. Chavarria: No.

Mr. Godfrey: And the AW codes were assigned by the Department of Interior before that data was given to [Arthur] Andersen, right?

Mr. Chavarria: Yes.

Mr. Godfrey: And you don't know who either by name or position or even subagency within Interior was responsible for assigning those prefixes, right?

Mr. Chavarria: Right.

Mr. Godfrey: And you don't know the process by which those prefixes were assigned, right?

Mr. Chavarria: Right.

Mr. Godfrey: You've never seen a key or legend that would state what that prefix signifies, have you?

Mr. Chavarria: Right.

Nov. 10, 2009 Tr. 43:14-44:5 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.'s counsel)); see id. at 39:7-40:2 (acknowledging similar deficiencies with respect to code 9701). Mr. Chavarria acknowledged that the 9701 and AW codes could have been assigned incorrectly. Id. at 181:12-15; see Tr. 287:3-11 (Mr. Chavarria) (agreeing that it was not "part of [Arthur] Andersen's tasks given to it by Interior to check to see that those kinds of [code] posts had been assigned correctly to transactions"). Moreover, to the extent he relies on these codes to identify investment interest transaction, Mr. Chavarria admitted that "it's not free from all doubt" that these transactions "are actually

investment transactions.” Nov. 10, 2009 Tr. 182:17-23 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.’s counsel)).

For CD and Government Security Interest (Column C of Schedule 1A), Mr. Chavarria further relies on investment reports from Interior’s investment system (the “investment system”). See Tr. 241:2-7 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.’s counsel)); Nov. 9, 2010 Tr. 146:23-147:1, 193:2-6 (colloquy between Mr. Chavarria and Mr. Kim (def.’s counsel)); see DX 2703-0024-0027 (CD and Government Security Chart). The “investment system” was “an electronic database that tracked the individual investments at the individual investment level.” Tr. 213:14-214:4 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.’s counsel)). Arthur Andersen was not provided the “investment system” to review in reconciling transactions that occurred prior to FY 1978. Id. at 236:21-237:9. Because the “investment system” no longer exists, “the only remains of that system are the incomplete paper printouts that [Mr. Chavarria] has been able to locate.” Id. at 241:8-14; see id. at 287:16-288:2 (admitting that some printed investment reports are missing and that they may not reflect all the data fields that existed in the electronic form of the “investment system”). The investment reports that Mr. Chavarria relied on in his analysis for the November 2009 hearing and the June 30, 2010 trial are existing printouts from the computerized, and now defunct, “investment system.” Id. at 241:1-7. As the court noted in Osage IV, “there is nothing on the face of any of the [investment reports] indicating that the interest was actually credited to the Osage Nation.”⁸⁸ Osage IV, 93 Fed. Cl. at 36 (citing Nov. 10, 2009 Tr. 50:25-51:7 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.’s counsel))).

What Mr. Chavarria has attempted to do is match up the “other” postings from the Andersen statements of account with investment report interest amounts in order to reclassify the “other” amounts as interest credits. Nov. 10, 2009 Tr. 51:8-13 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.’s counsel)) (agreeing that “what [he] attempted to do in going through [the investment reports] was to find amounts under the column Earnings at Maturity that matched with amounts that were in the Andersen statements of account for the time, the period in question”). Mr. Chavarria acknowledged that he did not find or attempt to find investment reports for every month, id. at 49:19-50:2, and that he did not reconcile the investment transactions against any source documents or records showing the purchase of the investments and redemption of the

⁸⁸ It was in relation to this fact that the court stated it would “entertain at trial the question of whether or not the credit amounts to which Mr. Chavarria points were ever actually credited to the Tribe,” Osage IV, 93 Fed. Cl. at 36, not, as defendant proposes, because the court was “confused,” see Def.’s Resp. Br. 2-3. The court understands that the “other” amounts from the Andersen statements of account were actually credited to plaintiff’s accounts and that the question before the court is whether certain of those “other” amounts should be reclassified as interest, thereby reducing the amount of plaintiff’s damages. See Tr. 258:22-24 (Mr. Chavarria) (“[T]he statements of account . . . generated for the Tribe . . . identifies the credits for the Tribe”); Def.’s Resp. Br. 2-4; Pl.’s Br. 25-26.

investments as an accountant normally would, id. at 56:15-57:17. Mr. Chavarria also acknowledged that “[i]t was not part of [his] assignment to go and find additional information that would favor the tribe in calculating the amount of investment income they should have received for those years,” id. at 58:9-13, and that he did not “attempt to determine whether there were other transactions . . . that were credits or should have been credits to Account 7386 in the Osage Nation’s favor that didn’t match with anything on the statements of account for those years,” id. at 59:23-60:5; see Pl.’s Br. 26-27 (“A comprehensive analysis of such documents might have shown any number of varieties of errors: that transaction amounts were wrong, that there were investment credits or debits that were incorrectly left off the Andersen statements of account entirely . . . or that investment transactions had been assigned to the wrong tribe’s account.”).

Mr. Chavarria did not perform the same analyses for fiscal years 1973-1977 as Arthur Andersen did for the later time periods covered under its reconciliation project. See Pl.’s Br. 27-28; PX 476-0003-0006 (Andersen Rpt.); PX 513-0018-0022 (GAO Rpt.); Tr. 214:14-215:2 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.’s counsel)). Arthur Andersen verified certain investment transactions to the extent internal financial documents were provided for FY 1986 through FY 1991, PX 476-0004 (Andersen Rpt.); PX 513-0018-0019 (GAO Rpt.); Tr. 216:18-217:17 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.’s counsel)), but those procedures were discontinued because of “time and cost constraints and efficiency,” Tr. 217:12-218:3 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.’s counsel)); PX 513-0019 (GAO Rpt.). Mr. Chavarria testified that he was not aware of the existence of external source documents for investments for the Osage Nation for the time period before 1978. Tr. 219:15-220:12 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.’s counsel)). Mr. Chavarria also acknowledged that he did not revise any of the transaction dates in FY 1973 through FY 1977 by searching out source documents as Arthur Andersen had done in performing its Treasury interest analysis for the 1978 to 1992 time period. Id. at 227:12-231:6.

As the court explained in Osage IV:

It is undisputed that in preparing his new analysis, Mr. Chavarria went beyond the accounting provided to the Osage Tribe through the Andersen TRP in order to conclude that credits were missed by plaintiff in making its calculations. . . . Mr. Chavarria himself admitted that in performing his new analysis, he disregarded evidence on the trust fund investment reports that appeared to show Osage investment income for account 7386 that is missing from the Andersen [R]eport.

Osage IV, 93 Fed. Cl. at 35 (internal quotations and citations omitted). Further, Mr. Chavarria testified that he did not conduct an analytical review process, which included “investigat[ing] unusual fluctuations in receipts and disbursements activity,” PX 476-0005 (Andersen Rpt.), as Arthur Andersen had done for FY 1978 through FY 1992. Tr. 225:5-25 (colloquy between Mr. Chavarria and Mr. Godfrey (pl.’s counsel)); see PX 476-

0044 (providing a summary of the analytical review procedures and reportable conditions for the Osage Nation).

The court disagrees with defendant's contention that Mr. Chavarria "merely classifi[ed] previously unclassified actual receipts" and that his "classification of actual credits . . . for fiscal years 1973-77 is . . . not a 'revision' of the TRP, but is instead simply a supplement to the TRP that provides an analysis not contained therein." Def.'s Resp. Br. 4-5. Mr. Chavarria's interest credit analysis is a revision of the Andersen Report that is entirely favorable to the government--a predictable result of a project that no trustee should have undertaken. Moreover, the analysis and data relied upon by Mr. Chavarria do not persuade the court that the results are more reliable and provide a more accurate statement of accounts than the Andersen Report.⁸⁹ For the foregoing reasons, the court finds that plaintiff's reliance on the interest credits contained in the Andersen Report, provided to the Tribe by the government as trustee, is reasonable. Accordingly, the interest amounts that should be credited for fiscal years 1973-1977 are those that are provided in the Andersen statements of account: \$0.00 credited in FY 1973, \$0.00 credited in FY 1974, \$0.00 credited in FY 1975, \$281,829.77 credited in FY 1976, \$88,484.58 credited in FY 1976Q, and \$402,099.84 credited in FY 1977.

IV. Conclusion

The court, guided by Warm Springs, holds that plaintiff has met its burden of proving that its reliance on the Koch data to estimate a portion of the damages it is due is reasonable and that its reliance on the Andersen Report's statements of interest to estimate a portion of its damages is reasonable. The court directs the parties to make gravity adjustments to oil prices in accordance with Part III.B of this Opinion.

On or before Thursday, January 13, 2011 at 4:00 p.m. EST, the parties shall file with the court an agreed statement of damages calculated in accordance with this Opinion and the opinion of the court in Osage IV. To the extent that the parties shall not agree on

⁸⁹ Defendant argues that "if [p]laintiff is correct that more data must be analyzed before the interest credits data that Mr. Chavarria used may be accepted by this [c]ourt, then it must follow that [p]laintiff's use of the Koch data must likewise be rejected because of [p]laintiff's failure (and the complete inability of any party or the [c]ourt) to analyze more data." Def.'s Resp. Br. 7; see Def.'s Br. 11 n.2. The court reminds defendant that it is a trustee that has not only breached its fiduciary duty to collect, deposit, and invest income owed to the Tribe, but has also failed to collect and maintain adequate records necessary to estimate the damages it owes to the Tribe. Under Warm Springs, 248 F.3d at 1375, "to the extent that the difficulty in determining the amount of loss suffered by the Tribes is attributable to improper accounting procedures followed by the BIA, the consequences of those difficulties should not be visited upon the Tribes." See also id. at 1373 (quoting Bigelow v. RKO Radio Pictures, Inc., 327 U.S. 251, 265 (1946)) ("[The] wrongdoer [must] bear the risk of the uncertainty which his own wrong has created."); see also Pl.'s Br. 21 ("The uncertainty here . . . is whether the United States' selective revisiting of the Andersen Report in litigation results in an overall estimate that is more accurate.").

any item of damages, each party shall, at or before such date and time, file a separate calculation of damages with respect to such item, together with an explanation of that party's understanding of the basis of the parties' disagreement as to each such item.

IT IS SO ORDERED.

s/ Emily C. Hewitt
EMILY C. HEWITT
Chief Judge

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