EXAMINATION REPORT
Denver International Airport
PetroPro Engineering, Inc. Contract
March 2018

Office of the Auditor
Audit Services Division
City and County of Denver

Timothy M. O'Brien, CPA
Denver Auditor

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The Audit Committee is chaired by the Auditor and consists of seven members. The Audit Committee assists the Auditor in his oversight responsibilities regarding the integrity of the City's finances and operations, including the reliability of the City's financial statements. The Audit Committee is structured in a manner that ensures the independent oversight of City operations, thereby enhancing citizen confidence and avoiding any appearance of a conflict of interest.

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Audit report year: **2018**

Timothy M. O'Brien, CPA
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March 15, 2018

AUDITOR'S REPORT

CliftonLarsonAllen LLP (CLA) has completed an examination of Denver International Airport's (DEN) contract with PetroPro Engineering, Inc. (PetroPro) to manage the oil and gas wells. The purpose of the examination was to determine whether the airport is adhering to established processes related to contract procurement, monitoring PetroPro's contractor selection processes and procedures, appropriate compensation and materials payment practices, and recording and reporting of expenditures and royalty revenues earned on the oil and gas wells.

The examination provided recommendations to improve controls surrounding procurement document retention, timely reconciling of royalty revenues, and monitoring the total costs in operating the oil and gas wells on an ongoing basis.

This examination is authorized pursuant to the City and County of Denver Charter, Article V, Part 2, Section 1, *General Powers and Duties of Auditor*, and was conducted by CliftonLarsonAllen LLP in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the examination to obtain sufficient, appropriate evidence to provide a reasonable basis for findings and conclusions based on examination objectives. We believe that the evidence obtained provides a reasonable basis for the findings and conclusions based on examination objectives.

We extend appreciation to airport personnel who assisted and cooperated with us and CLA during the examination.

Denver Auditor's Office

Timothy M. O'Brien, CPA
Auditor

CliftonLarsonAllen LLP
CLAconnect.com

INDEPENDENT ACCOUNTANTS' REPORT

City and County of Denver, Denver Auditor's Office
Denver, Colorado

We have examined the City and County of Denver, Denver International Airport's procurement and hiring of PetroPro Engineering, Inc. by the City and County of Denver to perform management and operation services of oil and gas wells at Denver International Airport (DEN) as identified in the PetroPro/DEN agreement (Contract No. 201524898), payments to contractor for material and services, and proper recording of contractor and related materials expenditures. DEN's management is responsible for procurement and hiring of PetroPro Engineering, Inc. by the City and County of Denver to perform management and operation services of oil and gas wells at DEN as identified in the PetroPro/DEN agreement (Contract No. 201524898), payments to contractor for material and services, and proper recording of contractor and related materials expenditures based on the City and County of Denver's procurement policy, Executive Order 8, contract documents, and accounting records. Our responsibility is to express an opinion on DEN's procurement and hiring of PetroPro Engineering, Inc. by the City and County of Denver to perform management and operation services of oil and gas wells at DEN as identified in the PetroPro/DEN agreement (Contract No. 201524898), payments to contractor for material and services, and proper recording of contractor and related materials expenditures based on our examination.

Our examination was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants and the standards for attestation engagements contained in *Government Auditing Standards*. Those standards require that we plan and perform the examination to obtain reasonable assurance about whether DEN's procurement and hiring of PetroPro Engineering, Inc. by the City and County of Denver to perform management and operation services of oil and gas wells at DEN as identified in the PetroPro/DEN agreement (Contract No. 201524898), payments to contractor for material and services, and proper recording of contractor and related materials expenditures is in accordance with the criteria, in all material respects. An examination involves performing procedures to obtain evidence about DEN's procurement and hiring of PetroPro Engineering, Inc. by the City and County of Denver to perform management and operation services of oil and gas wells at DEN as identified in the PetroPro/DEN agreement (Contract No. 201524898), payments to contractor for material and services, and proper recording of contractor and related materials expenditures. The nature, timing, and extent of the procedures selected depend on our judgment, including an assessment of the risks of material misstatement of DEN's procurement and hiring of PetroPro Engineering, Inc. by the City and County of Denver to perform management and operation services of oil and gas wells at DEN as identified in the PetroPro/DEN agreement (Contract No. 201524898), payments to contractor for material and services, and proper recording of contractor and related materials expenditures, whether due to fraud or error. We believe that the evidence we obtained is sufficient and appropriate to provide a reasonable basis for our opinion.

In our opinion, DEN's procurement and hiring of PetroPro Engineering, Inc. by the City and County of Denver to perform management and operation services of oil and gas wells at DEN as identified in the PetroPro/DEN agreement (Contract No. 201524898), payments to contractor for material and services, and proper recording of contractor and related materials expenditures, is presented based on the City and County of Denver's procurement policy, Executive Order 8, contract documents, and accounting records, in all material respects.

CliftonLarsonAllen LLP

CliftonLarsonAllen LLP

Broomfield, Colorado
March 15, 2018

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Introduction and Background

CliftonLarsonAllen LLP ("CLA") was tasked by the Auditor to perform an examination over the management and operations of oil and gas wells by PetroPro Engineering, Inc. (PetroPro) on Denver International Airport (DEN) property. The agreement between DEN and PetroPro being examined was entered into on September 5, 2016 and covers the time period of November 1, 2016 through October 31, 2021 for an amount up to $3,600,000. As part of the deliverables, CLA presented a report to the Audit Committee and findings were sent to DEN. PetroPro performs management and operation services of oil and gas wells at DEN as outlined in the PetroPro/DEN agreement (Contract Number 201524898). This agreement was awarded to PetroPro through a Request for Qualifications (RFQ) process dating back to November 2015.

Objective

The objectives of the examination were to review the following:

- procurement and hiring of PetroPro Engineering, Inc. by the City and County of Denver
- payments and recording of PetroPro invoices and related materials expenditures
- determine whether DEN is adhering to established contractor selection processes and procedures
- determine if DEN used appropriate compensation and materials payment practices for the PetroPro agreement
- recording and reporting of expenditures and royalty revenues earned on DEN's oil and gas wells into the City's accounting records

Scope

The examination performed consisted of review and evaluation of:

- PetroPro Engineering Inc.'s general form of Contractor Agreement to provide services for management and operation of oil and gas wells on DEN property, including production, monitoring revenue, and compiling reports. Specific reports are referenced in Exhibit A of the PetroPro Engineering contract.

- PetroPro Engineering, Inc.'s general form of Contractor Agreement to provide services for management and operation oil and gas wells on DEN property, including environmental compliance and supervising pumpers.

- PetroPro Engineering, Inc.'s process of hiring contractors to perform prescribed tasks and/or provide materials identified in associated purchase orders.

- PetroPro Engineering, Inc.'s payments to contractors for materials and services to ensure that the expenditures are appropriate and competitive with the market.

- DEN's process to manage the contract with PetroPro Engineering, Inc. to ensure proper recording and reporting of contractor and related materials expenditures into the City's accounting records.

The contract and payments subject to the examination consisted of the following:

- The contract between the City and County of Denver and PetroPro Engineering, Inc., Contract Number 201524898, to perform management and operation services at Denver International Airport (DEN), for an amount up to $3,600,000 for the term of the agreement covering November 1, 2016 through October 31, 2021.

  This contract was subject to testing as described in the Methodology section below. The total amount billed and paid to date by DEN to PetroPro Engineering, Inc. under this agreement was approximately $568,000, covering a time period of November 2016 through October 2017. Three of twelve monthly payments, or 25%, made by DEN to PetroPro Engineering, Inc. were selected for detailed testing as described in the Methodology section below

Methodology

In performing the examination of the procurement and hiring of PetroPro Engineering, Inc. (PetroPro) by the City and County of Denver to perform management and operation services of oil and gas wells at Denver International Airport (DEN) as identified in the PetroPro/DEN agreement (Contract Number 201524898), payments to contractor for material and services, and recording of contractor and related materials expenditures, the methodologies included the following:

- Inquire of key personnel from DEN, the Denver Auditor's Office, and PetroPro to obtain an understanding of the contract, the bidding process, and scope of work that DEN engaged PetroPro to perform in relation to the contract.

- Observe internal controls related to specific contract language and provisions, processes and controls utilized by PetroPro and DEN from initiation of contract to payment of materials and services to the contractor.

- Inspect the bidding process documentation surrounding the contracting between DEN and PetroPro.

- Selection and inspection of specific payments and invoices paid by DEN to PetroPro.

- Inspect and trace payment of materials and services into the City's accounting records.

- Inspection of the monthly Lease Operating Expense (LOE) reports prepared by PetroPro to observe trends in the royalty revenues earned and expenses incurred on DEN's oil and gas wells.

Findings

1. Document Retention Policy Not Followed for Request for Qualifications No. 201524898

We inspected the Request for Qualifications (RFQ) No. 201524898 issued by Denver International Airport (DEN) of the City and County of Denver issued in November 2015 for oil and gas field management. We also inspected the five bids that DEN received in response to the RFQ, as well as the addendums, and supporting documentation evidencing the bidding process and determination of the winning bid. The agreement between PetroPro Engineering, Inc. (PetroPro) and the City and County of Denver to perform management and operation services of oil and gas wells at Denver International Airport (DEN) as identified in the PetroPro/DEN agreement (Contract Number 201524898) was entered into on September 5, 2016 as a result of the RFQ process.

In our examination of the documentation provided by DEN as well as DEN's Contract Evaluation Guidelines No. 1015, Series 1000-Finance Unit, Issue Date of September 25, 2015, we noted that the overall scores determined by the evaluation committee during the RFQ process were not retained. DEN's Contract Evaluation Guidelines No. 1015 indicates the following:

- Record Retention: Items that should be retained by Airport Procurement: all submitted proposals, non-responsive notices, a list of evaluation committee members, overall scores and rankings, proposal document, addenda(a), all correspondence to proposers and the selected proposer. Records will be destroyed per the DEN record retention policy.

We did see evidence of the other items noted per the policy, but evidence of the overall scores was not retained so this could not be examined during our procedures. Failure to retain all of the appropriate documentation was the cause for the control failure.

The Committee on Sponsoring Organization (COSO) framework defines internal control as a process, effected by an entity's governing body, management and other personnel, designed to provide "reasonable assurance" regarding the achievement of objectives in the following categories:

- Effectiveness and efficiency of operations
- Reliability of financial reporting
- Compliance with applicable laws and regulations
- Safeguarding of Assets

Retention of documents in accordance with policy plays a pivotal role in ensuring compliance with regulations and evidence that the RFQ process was carried out in accordance with policy.

Recommendation 1: We recommend that DEN enhance the internal controls surrounding document retention to ensure compliance with policies. This can be accomplished by improving checklists and process flows surrounding documentation retention to ensure all documents are kept in accordance with policies.

2. Accounting and Reconciliation Activities for Royalty Revenue Not Performed Timely

Through inquiry with DEN personnel and inspection of general ledger detail provided by DEN, it was noted that the City and County of Denver implemented a new accounting system, Workday, in August 2017. As a result, there have been significant delays in accounting and reconciling activities including the royalty revenues that are earned by DEN from the production of oil and gas for DEN's wells. These oil and gas royalties are sold to third parties and recorded to the City and County of Denver's accounting system, Workday, and are reconciled with PetroPro's records. This activity has not been recorded and reconciled timely by DEN due to the implementation issues. General ledger information for this royalty revenue by DEN and records maintained by PetroPro could only be supplied to us through July 2017 as it was still being reconciled by DEN. DEN personnel subsequently provided us with the full 2017 reconciled royalty revenue general ledger information on February 20, 2018.

The COSO framework is designed to provide "reasonable assurance" regarding the achievement of certain objectives as previously described, including the reliability of financial reporting.

Timely recording and reconciling of general ledger activity is critical for reliable financial reporting and proper monitoring of operations. Issues with implementation of the Workday accounting system was the cause for the control failure.

Recommendation 2: We recommend that DEN enhance the internal controls surrounding timely reconciling of its royalty revenues related to its oil and gas wells. This can be accomplished by fully implementing the new accounting system, Workday, so that timely recording and reconciling of this activity can take place.

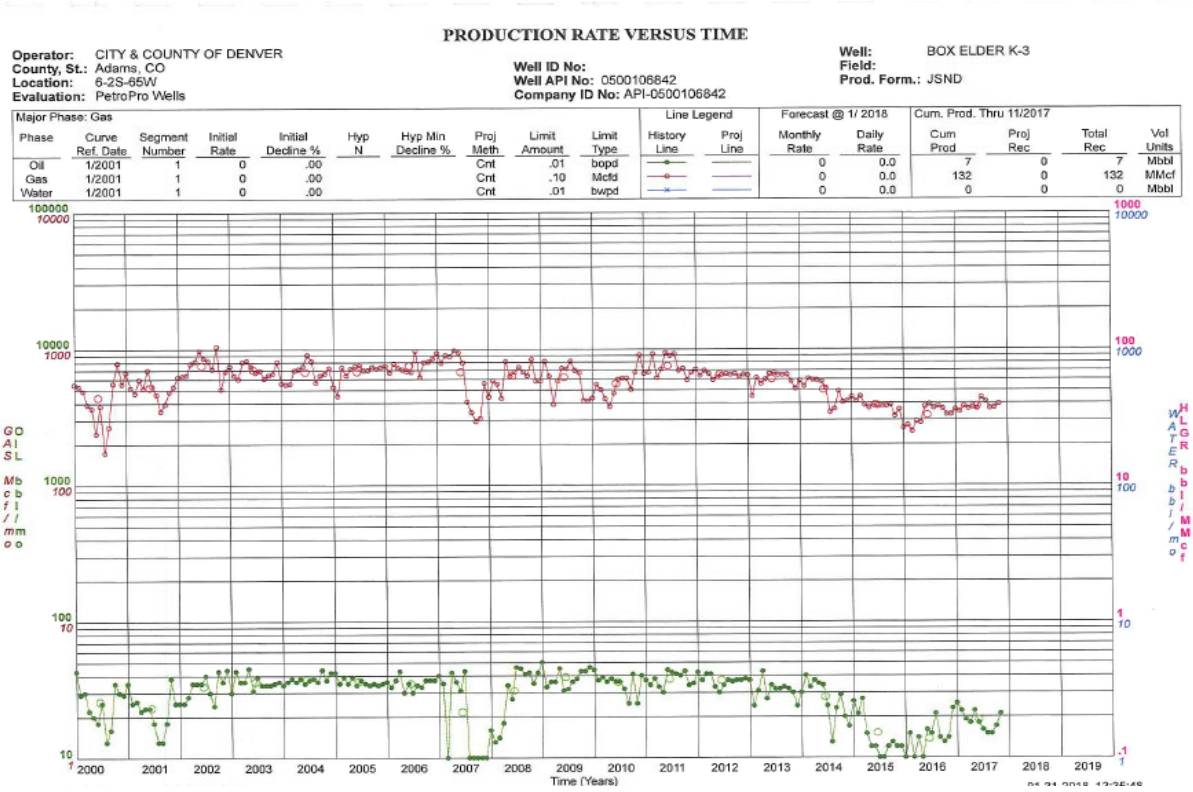
3. *Denver International Airport's Oil and Gas Well Operations Do Not Provide the Best Value to the City and County of Denver*

CLA inspected the Lease Operating Expense (LOE) reports for the months covering January 2017 through September 2017 that are generated monthly by PetroPro. These LOE reports track the royalty revenues earned and expenses spent on each oil and gas well that is operated and managed by PetroPro for DEN. CLA noted that significant amounts are being paid to outside vendors other than PetroPro related to the maintenance and operations of the wells. Significant is being defined as more than twenty-five percent of the payments made to PetroPro subject to this examination. DEN is contracted with PetroPro to perform a large scope of services for the management and operations of the wells. There are also outside vendors that are not subcontractors of PetroPro; rather, they are additional third parties that DEN is directly engaging with to perform additional work on the wells. These are costs incurred above and beyond the payments to PetroPro (which include subcontractor services) that are typically required to be performed in order for DEN to maintain regulatory compliance based on State and Federal agency monitoring and reports. For example, in September 2017, PetroPro's invoice to DEN was a total of $53,692.02 which included management fees of $23,245, operating fees of $18,140, and reimbursable expenses of $12,307.02. Per the LOE report, total operating expenses for that month of September 2017 were $204,971.21. The difference of approximately $151,000 was primarily well work on the Box Elder K-3 tank battery relating to trucking, tool rentals, water hauling, and workover rig work. This is an example of additional costs that DEN is incurring on their wells outside of the amounts paid to PetroPro under the agreement. We noted that the average monthly total operating expense for the time period from January 2017 through September 2017 per the LOE reports was $115,575.

Review and analysis of the trends being observed through the LOE reports, which includes review of all costs incurred by DEN for oil and gas wells, should be conducted by DEN management as an internal control mechanism to help evaluate the efficiency and effectiveness of operations.

Also, through review of the LOE Year Summary 2017 that covers the months from January 2017 through September 2017, total net revenue earned on the wells (operating expenses less gross revenue earned) was $617,530. This total consisted of 43 tank batteries encompassing 71 total wells. A tank battery is an arrangement of storage and processing tanks, flow lines and other equipment necessary to operate a well and thus one tank battery can cover multiple wells. Of these 43 tank batteries, we noted there were 17 negative cash flow tank batteries (which encompass 26 wells) being operated for a total net loss of $226,667. 6 of these wells are shut-in or temporarily abandoned and incur only minimum management and operating costs. The remaining 20 wells in question were operating at a loss in 2017 based on the LOE Summary and had decline curves when an analysis of production rate versus time was conducted from 2000 through 2017. A decline curve analysis (DCA) is a graphical procedure used for analyzing declining production rates and forecasting future performance of oil and gas wells. Performing decline curve analysis on DEN's oil and gas wells is another internal control mechanism to help evaluate the efficiency and effectiveness of the oil and gas well program. DEN's lack of detailed analysis of the LOE reports and forecasting future performance could be the cause of this control issue.

Below is a graphic of the Box Elder K-3 well decline curve as an example of decline curve analysis. The Y axis indicates the rate of gas depletion (red line) and oil depletion (green line). The X axis indicates time in years and displays the production decline curve. The unit of measurement for oil is Mbbl (thousand barrels of oil) and for gas is MMcf (one million cubic feet). The below graph represents the historical decline curve from 2000 through 2017. This methodology can be further utilized to forecast future performance of oil and gas wells based on this historical analysis. DEN's wells have varying starting production years between 1974 and 2008.



The COSO framework is designed to provide "reasonable assurance" regarding the achievement of certain objectives as previously described, including the effectiveness and efficiency of operations.

Recommendation 3: Based on the observations noted above related to the LOE, DEN should enhance its analysis of total costs incurred in operating the oil and gas wells on an ongoing basis to determine if there is a business case to keep operating in this manner. The net revenue earned on the selling of oil and gas well production less operating expenses incurred could be considered excessive and should be further analyzed to determine if it is a good use of DEN's resources to continue operations.

Recommendation 4: Regarding the 17 negative cash flow tank batteries (26 wells), DEN should have a well-by-well review with PetroPro of the 20 wells in question with negative cash flows that are not shut-in or temporarily abandoned. This can help determine if they should be shut-in given the decline curves observed on these 20 wells that are included in the negative cash flow tank batteries.

AGENCY RESPONSE

March 05, 2018

Auditor Timothy O'Brien, CPA
Office of the Auditor
City and County of Denver
201 West Colfax Avenue, Dept. 705
Denver, Colorado 80202

Dear Mr. O'Brien,

The Office of the Auditor tasked CliftonLarsonAllen LLP (CLA) to perform an examination of the PetroPro Engineering, Inc. Contract with Denver International Airport.

This memorandum provides a written response for each reportable condition noted in the Auditor's Report final draft that was sent to us on February 13, 2018. This response complies with Section 20-276 (c) of the Denver Revised Municipal Code (D.R.M.C.).

FINDING 1
Document Retention Policy Not Followed for Request for Qualifications No. 201524898

RECOMMENDATION 1
We recommend that DEN enhance the internal controls surrounding document retention to ensure compliance with policies. This can be accomplished by improving checklists and process flows surrounding documentation retention to ensure all documents are kept in accordance with policies.

Agree or Disagree with Recommendation	Target date to complete implementation activities (Generally expected within 60 to 90 days)	Name and phone number of specific point of contact for implementation
Agree	10/16/17	Matthew Karnes 303.342.2218

Narrative for Recommendation 1
DEN Contract Services agrees with the finding above. DEN Contract Services has enhanced internal controls surrounding document retention, ensuring that standing policies are updated to include those controls.
In addition, DEN Contract Services has created a document closeout process that ensures all supporting documents produced during the Contract Procurement process are retained per internal document retention guidelines. This includes a peer review audit, or quality check, for each public procurement once that procurement has been completed and the contract has been executed. To assist in this quality review, DEN Contract Services created a Contract Document Peer Review Checklist that a peer uses to review the documents in question. DEN Contract Services management reviews and

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signs the completed Peer Review checklist as a final control step, noting any missing or pertinent information on that peer review checklist.

FINDING 2
Accounting and Reconciliation Activities for Royalty Revenue Not Performed Timely

RECOMMENDATION 2
We recommend that DEN enhance the internal controls surrounding timely reconciling of its royalty revenues related to its oil and gas wells. This can be accomplished by fully implementing the new accounting system, Workday, so that timely recording and reconciling of this activity can take place.

Agree or Disagree with Recommendation	Target date to complete implementation activities (Generally expected within 60 to 90 days)	Name and phone number of specific point of contact for implementation
Agree	April 30, 2018	Michael Biel 303.342.2158

Narrative for Recommendation 2
With the Workday implementation, new processes were established to address reporting of revenues. Oil and gas well revenue activity reports provided by the third parties will be sent to a centralized location accessible by DEN Revenue Management and DEN Finance. The revenue activity reports information will be recorded in Propworks and integrated into Workday to generate billings and record revenue. Because Workday monthly financial records are typically closed within 10 to 15 days following month end, DEN Finance will accrue estimated monthly oil and gas revenues.

August 2017 and September 2017, were the first two months of transacting within Workday which lead to delays. There were several processes both from the City and DEN operations that changed during this transition. Identifying the new processes took time to address and understand.

FINDING 3
Denver International Airport's Oil and Gas Well Operations Do Not Provide the Best Value to the City and County of Denver.

RECOMMENDATION 3
Based on the observations noted above related to the LOE, DEN should enhance its analysis of total costs incurred in operating the oil and gas wells on an ongoing basis to determine if there is a business case to keep operating in this manner. The net revenue earned on the selling of oil and gas well production less operating expenses incurred could be considered excessive and should be further analyzed to determine if it is a good use of DEN's resources to continue operations.

Agree or Disagree with Recommendation	Target date to complete implementation activities (Generally expected within 60 to 90 days)	Name and phone number of specific point of contact for implementation
Agree	5/15/2018	Francisco Alonzo 303.342.2508

Narrative for Recommendation 3
DEN Commercial agrees with the recommendation above. DEN Commercial has hired the University of Wyoming's College of Business and Enhance Oil Recovery Institute to conduct a feasibility study of DEN oil and gas program. The study includes a comprehensive production, engineering and economic performance review of each well. The goal of this feasibility study is to evaluate the economics of the wells and help DEN develop the best short-and-long-term strategy for this program, including revenue enhancement opportunities, cost reduction strategies and a plugging and abandonment plan for wells that are either uneconomical or near the end of their production curve.

RECOMMENDATION 4
Regarding the 17-negative cash flow tank batteries (26 wells), DEN should have a well-by-well review with PetroPro of the 20 wells in question with negative cash flows that are not shut-in or temporarily abandoned. This can help determine if they should be shut-in given the decline curves observed on these 20 wells that are included in the negative cash flow tank batteries.

Agree or Disagree with Recommendation	Target date to complete implementation activities (Generally expected within 60 to 90 days)	Name and phone number of specific point of contact for implementation
Agree	5/15/2018	Francisco Alonzo 303.342.2508

Narrative for Recommendation 4
DEN Commercial agrees with the recommendation above. PetroPro has conducted a full curve analysis of all 20 wells in question. Their analysis shows that 2 wells are uneconomical and are in the plugging and abandonment list. The remaining 18 wells are still economical based on the latest full curve analysis conducted on 02/19/2018. As part of the feasibility study, the University of Wyoming will conduct an independent full curve analysis of each well to help DEN determine if additional wells need to be added to the plugging and abandonment list.

Please contact me at 303-342-2418 with any questions.

Sincerely,

George Karayiannakis
Senior Vice President, Airline and Commercial Affairs
Denver International Airport

cc: Valerie Walling, Deputy Auditor, CPA,CMC
Heidi O'Neil, CPA, CGMA, Director of Financial Audits
Dawn Wiseman, CRMA, Audit Manager
Sonia Montano, Internal Audit Supervisor