

ALASKA STATE LEGISLATURE
SENATE RESOURCES STANDING COMMITTEE

April 9, 2014

3:33 p.m.

MEMBERS PRESENT

Senator Cathy Giessel, Chair
Senator Fred Dyson, Vice Chair
Senator Peter Micciche
Senator Lesil McGuire
Senator Anna Fairclough
Senator Hollis French

MEMBERS ABSENT

Senator Click Bishop

COMMITTEE CALENDAR

PRESENTATION: SPRING REVENUE SOURCES BOOK

- HEARD

PRESENTATION: UPDATES FROM THE FIELD

- HEARD

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

BRUCE TANGEMAN, Deputy Commissioner
Department of Revenue (DOR)
Anchorage, Alaska

POSITION STATEMENT: Presented Spring Revenue Sources Book update.

BILL HARDHAM
Alaska Project Manager
Repsol E&P USA
Anchorage, Alaska

POSITION STATEMENT: Related Repsol's developments on the North Slope.

SCOTT JEPSEN, Vice President
External Affairs
ConocoPhillips Alaska

POSITION STATEMENT: Talked about ConocoPhillips's activities on the North Slope fields they operate.

SOPHIA WONG, Manager
Infrastructure and Pipeline Project
Pt. Thomson Project
ExxonMobil Development Company

POSITION STATEMENT: Related ExxonMobil's developments at Pt. Thomson and the North Slope.

FRANK PASKVAN
Alaska Technology Manager
BP Exploration Alaska Inc.
Fairbanks, Alaska

POSITION STATEMENT: Related BP's recent North Slope developments.

ACTION NARRATIVE

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CHAIR CATHY GIESSEL called the Senate Resources Standing Committee meeting to order at 3:33 p.m. Present at the call to order were Senators French, Dyson, Micciche, and Chair Giessel.

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CHAIR GIESSEL said she received a letter from Senator French in which he made an interesting request, that they put people speaking to them today under oath. But this is unprecedented and inappropriate. Springing an under-oath requirement on invited citizens at the last minute is not only unfair, but unprofessional. She consulted other Senators on the committee and none supported the criminal justice approach to this meeting. The people speaking to them today were asked to share trend lines that they see based on the economic climate and the work that is being done on the North Slope during this just-now concluding winter work season.

SENATOR FRENCH raised a point of personal privilege.

CHAIR GIESSEL said he was out of order.

At ease from 3:34 to 3:36 p.m.

Presentation: Spring Revenue Sources Book

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CHAIR GIESSEL said today's agenda included hearing from the Department of Revenue (DOR) and some of the companies producing up on the North Slope. She welcomed Deputy Commissioner, Bruce Tangeman. She asked committee members to hold their questions until the end.

BRUCE TANGEMAN, Deputy Commissioner, Department of Revenue (DOR), Anchorage, Alaska, said their spring forecast update concentrates on the production side of the forecast. He would start with some of the changes they made to it. They saw looking back over the last 20 years that the previous methodology was overly optimistic. So, they decided to put a more conservative forecast out for the understanding and the benefit of the decision makers, because this is used for budgeting and to give a sense of revenue streams. His personal goal was to put a prediction out there and beat it, for a change.

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Historical forecast: Back when oil first started flowing there were only two pockets, Prudhoe Bay and Kuparuk, and they were fairly easy to forecast off of. But then in the late 1990s more production came on, mostly in smaller quantities, and that made making forecasting more difficult.

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MR. TANGEMAN said slide 4 speaks to why a change in the methodology in production forecasting was required. He remember in 2011 coming out of House Finance and then director of the Division of Oil and Gas Bill Barron telling him there was a better way to do it. That is what started the process of putting a more accurate forecast together.

He explained that in 2005 and 2007 (when it missed by 150,000 barrels) the department used to project 10 years out; in 2009 they missed by 95,000 barrels. So, fall of 2011 was the last year the old methodology was used. They realized that while some things do come on at the projected level, some things don't, and not everything happens as predicted. And the state was relying on information which led to inaccurate forecasts to be used as a budgeting tool.

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So, fall of 2012 was the first year of using the new methodology. Mr. Tangeman explained that wells that are currently producing are much more predictable. Those under

development and under evaluation are what is possible. Under development is a little more solid; it usually has some funding attached to it and a lot more analysis, but still might get kicked out. For example, Liberty was once under development; a budget was attached to it and everything was always two years out, but it never came to fruition.

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SENATOR MCGUIRE joined the committee.

MR. TANGEMAN explained that under evaluation is a little more skeptical. It's known, but not necessarily on the budgeted list quite yet. Under the old methodology those would be added to the production forecast. The state would always take what was hoped for, and assumed the upper end.

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So, for the fall 2012 forecast, with the help of Bill Barron, they put in a risk factor for new oil. Currently producing was not risked, because the wells had been operating and were fairly predictable going forward. Under evaluation was risked not quite as aggressively as under development, but the bottom line was they were putting in place a production forecast that was not as rosy as in the past. It was not responsible to put out the most optimistic forecast and know they were not going to hit it, because those figures will affect future budget decisions.

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The Revenue Sources Book now has a high-case/a forecast case/and a low case scenarios. In the past, the high case was the old methodology. The forecast line is now similar to the high case, because most of that is the currently producing oil. The risk really starts with production that is seen as possible but not to bank on for budgetary purposes; the low case is just the currently producing oil if no new oil came on line.

He pointed out that in December they were forecasting about a 4.1 percent decline in production for FY14, and after eight months of "actuals," they are now looking at a 1.8 percent decline, so this was his first chance to say they beat the forecast. Basically, he summarized that his job is to put a conservative number out there, and it's industry's job to beat it.

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MR. TANGEMAN said in order for a project to make it into the forecast there has to be well data confirming a reservoir, a

company has to be actively pursuing development, and a budget should be in place. Basically, he needs to have comfort that they are far enough down the road that they can start counting barrels in anticipation of production.

Projects are considered under development if a company has partner alignment and/or senior management approval and the project has been allocated funds in the company budget. Under evaluation is more that the resource is known and being pursued, but financial hurdles have not been met. So, many of the recent announcements by BP and ConocoPhillips are included in this, but production estimates starting in FY17/18 (some of the lead times required) are still being risked.

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MR. TANGEMAN explained what is not included in the forecast are undiscovered resources (the potential on the North Slope is tremendous), technologically challenged oil, heavy viscous shale (three times the size of the Bakken but with development challenges), and regulatory burdened or otherwise difficult (federal issues with OCS and ANWR) resources.

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A five year look at the December forecast and the Spring updated forecast indicates that in FY14 the barrels were up to 13,600. Based on company information, the summer field maintenance is expected to be deeper than originally anticipated, but a lot of that is in preparation for the capital investments they have announced. So, while it's more or less even for this coming fiscal year (FY15), those capital investments do show up in the Fall forecast.

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MR. TANGEMAN said that future production varies greatly based on projects currently under development or evaluation. Today they recognized it but they don't bank on it. The potential for significant production increases exist, but forecasting it will occur is not prudent. Likelihood of development increases with better economic conditions (price, costs, and taxes). And many things can cause a project to be delayed or abandoned.

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MR. TANGEMAN reviewed his slides 14-16 that illustrated the current tax system in place and the capex forecast for the next 10 years. He explained that capex is risked just like production in the out years.

He noted that the change between the two tax systems took about 20 percent capital credit off the table, and questions were raised about whether expenditures would be accelerated to take advantage of that. But the forecast for Spring FY14 was a little less. Between Spring FY14 and Spring FY15 they forecasted \$800 million of additional investment and \$1.3 billion. He pointed out that even though the 20 percent credit was taken off the table, but there is still an increase in capital investment.

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SENATOR FRENCH objected to the chair's use of the word "unprofessional" to describe his letter. He then focused on slide 11 that indicated 536,000 barrels will be produced in FY14 and said that Mr. Tangeman is claiming that is an increase. But for him to believe it really is an increase means he has to ignore the other two most recent forecasts for FY14; one said we'd make the same about (536,000 barrels) and the other says we'd make 540,000 barrels. And that gets them back to the forecast from a year ago, Spring 2013.

MR. TANGEMAN responded by going back to slide 8 and saying that everyone had been using 6 percent as a decline rate for the past several years, but it was really was 7.2, 6.6, 3.4, and 8.2 percent; the decline was accelerating a lot quicker than anticipated. So, to get back to those original numbers in the previous forecast was a much bigger uphill climb for them, which really makes getting to 1.8 percent that much more incredible.

SENATOR FRENCH asked if he was aware that one year ago ConocoPhillips' vice president told a gathering of investment analysts the company was planning on a 2-3 percent decline rate from its North Slope operations in the next few fiscal years.

MR. TANGEMAN replied that he had heard that.

SENATOR FRENCH remarked that so, they are seeing what they predicted: a lower decline rate.

MR. TANGEMAN replied that other companies are involved on the North Slope, but the bottom line is that no matter who you talk to in this building, more production was the goal. So, he was enthused by the 1.8 percent.

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SENATOR MICCICHE said he used to run a little city and recited this parable: city managers historically give low revenue predictions and are conservative in budgeting. Then when it

comes at the end of the year, everyone is really happy with the higher revenues. For years, the state didn't operate that way, and everyone wasn't excited at the results. Now they have more accurate revenue predictions, which he always supported. But spending should be matched accordingly. Now, people use those accurate numbers against legislators as if it were a bad thing. He asked if he saw other areas for improvement.

MR. TANGEMAN responded that the department relies on what industry tells them for their capex predictions. The reason it is risked is because the state is under a net tax system. So, the dollars they anticipate spending do affect the revenue stream to the state.

SENATOR MICCICHE said they want to do the best they can to understand future expenditures.

MR. TANGEMAN said that the Spring forecast does show an increase in about \$374 million for FY14, and that is good news.

CHAIR GIESSEL found no further questions and thanked Mr. Tangeman for his presentation.

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Presentation: Updates from the Field

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CHAIR GIESSEL invited Mr. Hardham to present Repsol's update.

BILL HARDHAM, Alaska Project Manager, Repsol E&P USA, Anchorage, Alaska, said they are a relatively new player on the North Slope. They are currently engaged in the exploration and appraisal phase. Repsol E&P USA is the US upstream operating subsidiary of Repsol SA, an integrated international oil and gas company headquartered in Madrid, Spain, with 25,000 employees worldwide, and exploration and production activities in 31 countries. Repsol is ranked the 112th on the 2013 Fortune 500 List. It has a history with high political risk countries, and has suffered several examples of contracts being changed, expropriation of assets, and civil unrest leading to lost business opportunities and erosion of value. As a result, several years ago, Repsol decided to rebalance its portfolio in favor of lower risk opportunities such as those found in OECD-type of countries.

Repsol has been looking at the Alaska North Slope for some time and took leases in the federal waters of the Beaufort and

Chuckchi Seas, but due to the uncompetitive fiscal terms for the Alaska North Slope, the economics were not attractive and they did not enter.

In 2011, when oil tax reform was introduced, it became apparent that Alaska was serious about making the North Slope more competitive and that is when Armstrong Oil and Gas presented an opportunity for Repsol to establish a material North Slope position. There were risks associated with coming in at this time before the certainty of oil tax reform, but it was a good opportunity that was a good fit for Repsol strategy. Additionally, if Repsol would have waited for more certainty in regards to oil taxes, the opportunity would likely have been lost or the price of entrance would have gone up. So, at that time, Repsol took a bit of a calculated risk in counting on oil tax reform and came to Alaska in March 2011 acquiring 70 percent interest in approximately 500,000 acres on the North Slope.

So, Repsol immediately set out to aggressively explore and appraise the acreage, all the while keeping an eye on oil tax reform. They are now completing their third winter season of activity and as the map shows, they have drilled nine wells on the North Slope and have acquired a significant amount of 3D seismic data and increased their acreage position to approximately 750,000 gross acres. They have invested more than \$500 million in their Alaska project and have announced three discoveries from last year's campaign.

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MR. HARDHAM said the passage of the new tax law last year gave Repsol the confidence to move forward with an aggressive campaign this winter, including three wells drilled with three drilling rigs and two large 3D seismic acquisition projects. They put a significant number of people to work and have more than 600 positions and \$250 million in investment on the North Slope associated with this program.

He noted that the DOR forecast doesn't include Repsol's production. This is because the appraisal of last year's discoveries needs to be completed before making a development decision. If they appraise well, and if the tax law stands, he was optimistic that a project will get approved internally. Hopefully, this will be the first of several North Slope development projects for them. He emphasized that the state oil tax structure is vitally important to Repsol's continued activity on the North Slope, and that under SB 21, the current tax structure is competitive. That increases the chances that

moderately-sized opportunities and marginal fields, ones that weren't commercial under ACES, have a much better chance of being developed under the new tax law.

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SENATOR FRENCH said that Mr. Hardham had made statements about how Repsol was encouraged by the tax reduction and that it gave them the confidence to go forward. He wanted to know what their internal rate of return is on their investments, their hurdle rate, and how the tax structure, which they have been told is taking in more now (than under ACES), plays into their decisions.

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MR. HARDHAM answered that Repsol doesn't operate under a minimum rate of return per se; it's more about an evaluation of the investment opportunities they have in front of them, and it would have to be positive. They have a limited budget for investments around the world, so any North Slope projects are going to have to compete against the opportunities that Repsol has in the rest of the United States and the 30 or so other countries around the world that they are in.

SENATOR FRENCH asked what projects they are considering pursuing now that are economic under SB 21 that were not economic under ACES and then asked him to explain the economic rationale between the two.

MR. HARDHAM explained that it's still early in the evaluation process to make those decisions. Their opportunities are not fully characterized from a geoscience or engineering perspective right now to where they are ready to make those decisions.

However, that being said, the first opportunity they are pursuing is one in the Coleville River Delta where they announced the discoveries; he called it a collective opportunity for development. The two wells there will be finished this winter and it will take a number of months to analyze the results. At that time, they hope to have enough information to make a decision.

SENATOR FRENCH asked if the current high tax rate is hurting Repsol's ability to invest in Alaska.

MR. HARDHAM answered that looking at a full cycle of economics, SB 21 is more favorable.

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SENATOR MICCICHE thanked him for being here and remarked that Repsol - and smaller companies - were sort of a targeted fan of ACES, and asked what changed their minds specifically with the current tax regime that made them come up here, and what kind of success will keep them around and draw more investors of their market cap size.

MR. HARDHAM explained that when Repsol looked at opportunities in Alaska under that tax structure, it was not advantageous. One of the benefits of that tax structure was getting tax credits to offset initial investments, but that, while important to some companies that might have constraints on acquiring financing, wasn't the case with Repsol. It had more to do with the basics of full-cycle economics, which just didn't compete. SB 21 is much more competitive in their view.

SENATOR MICCICHE asked what sustainable economics would draw other smaller companies - no matter what the size, as long as they can operate in a safe manner - to Alaska.

MR. HARDHAM answered that the current tax structure is competitive and should attract other investments to the North Slope. Stability is also important.

SENATOR MICCICHE asked if they are seeing good things in test wells.

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MR. HARDHAM replied that they are very encouraged with what they have seen so far and that they had discovered good quality oil.

CHAIR GIESSEL observed that Repsol would qualify under exploration and possible development for the gross value reduction credit.

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SENATOR MCGUIRE said she wanted to see increased production in Alaska and asked if the repeal of SB 21 would alter their investment decisions in Alaska.

MR. HARDHAM answered that a repeal of SB 21 would negatively affect Repsol's investment decisions going forward. SB 21 makes Alaska more competitive and a moderately-sized opportunity on the North Slope more competitive, as well.

SENATOR MCGUIRE asked how paying higher taxes on production affects future development plans.

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MR. HARDHAM answered Repsol doesn't compartmentalize exploration and development in looking at investments; it looks at the whole picture. The current tax structure is just much more competitive.

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SENATOR FAIRCLOUGH joined the committee.

CHAIR GIESSEL thanked Mr. Hardham for his presentation and invited Mr. Jepsen to give his presentation.

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SCOTT JEPSEN, Vice President, External Affairs, ConocoPhillips Alaska, said he would talk today about ConocoPhillips's activities on the North Slope fields they operate. He cautioned that their future performance could differ materially from the expectations outlined today, and the risk and uncertainties that affect their performance were outlined in "legalese" that he had provided them.

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MR. JEPSEN said that first he would talk about what is happening in 2014; second, he would give them an exploration update on what happened last winter with their exploration drilling, and lastly, he would touch upon the plans to spend \$2 billion in new investments that ConocoPhillips had announced since SB 21 was passed.

He said ConocoPhillips's 2014 budget is \$1.7 billion, about \$600 million more than it was in 2013 and about double what it was in 2012. In 2014, their net capital budget covered all activities for Kuparuk, Alpine, Prudhoe Bay, Pt. Thomson, Alaska Gas Project, and Cook Inlet. All the rest of the numbers he would talk about are gross numbers.

MR. JEPSEN said that CD5 is a big part of the budget. They spent about six years trying to get it permitted and once they did, they spent a lot of time and effort going through the process, and decided to go ahead and proceed regardless of the tax framework. It is a \$1-billion gross project. About \$400 million will be spent this year; they are now in the process of building the bridges and laying down the gravel. About 600 people are employed on the project. First production will be seen in 2015

at a peak rate of about 16,000 barrels/day, if all goes as planned.

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He said the other big chunk they are spending in 2014, about \$400 million, is on renewal projects; probably one of the biggest one is replacing 14 miles of 30-inch pipeline that brings water from their seawater plant back into the middle of the field for pressure maintenance in the Kuparuk field. They also are installing additional pigging facilities, which will allow them to maintain their pipelines.

With the exception of CD5, these projects are representative of the type of projects ConocoPhillips has done over the last six or seven years when ACES was in place. Now, since SB 21 was passed, they are starting to see the tip of the iceberg of newer projects that are going before the board for approval. One of those is Drill Site 2S in Kuparuk where they are spending about \$70 million this year to put gravel down for a new drill site. They have also brought in two additional rigs; one is doing mostly workovers that has added about 2,000 to 3,000 barrels/day of production in 2013. The other rig started up in January and will be doing new drilling.

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MR. JEPSEN said in terms of jobs, this means bringing in 1,750 new people to the North Slope; about 1,100 are working on CD5 and the seawater pipeline and about 275 are working on the projects they have announced since SB 21 was passed. About 480 are coming from the union halls in Fairbanks and there are about 900 non-union jobs. Another 350 engineering and fabrication jobs are going on in both Anchorage and Fairbanks. He provided a list of about 40 of the bigger companies they are doing business with saying that their work has a big impact on the whole Alaska business community.

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Slide 6 mapped ConocoPhillips's exploration wells. Mr. Jepsen said this last year they drilled two wells: Flat Top and Rendezvous 3. They are planning a new drill site in NPRA called Greater Moose's Tooth 1 (GMT 1), which he would talk about later. The Flat Top well is an accumulation different than the GMT 1 accumulation, but it could potentially be developed from the GMT 1 pad.

The Rendezvous 3 well is the third in a series, the first two having been drilled in 2000 and 2001. This is the follow-up well

to get more data, and if that looks good, it could lead to another drill site to the southwest. If GMT 2 is successful, it would be sequential after GMT 1. The idea is to level-load their resources, because stacking them all on top of each other would put a big strain on manpower, equipment, and engineering resources in the state. Hopefully, using this business model, they can do more in the long term in Alaska than if everything was stacked together.

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Since SB 21 passed, he said that ConocoPhillips had brought two rigs into the Kuparuk field. The workover rig is doing about 25-30 workovers a year and the drilling rig is drilling 10 per-year grass roots wells, a lot slower process.

Drill site 2S, the Shark Tooth well, is the result of exploration work ConocoPhillips did in 2012. If they are successful in getting funding, that would be a \$600 million project employing 240 people during construction, and with about 8,000 barrels/day peak production in 2016. He said these projects will be taken to the board and executive management late in 2014 for approval.

The next one, GMT 1, is an interesting prospect. It's going to be fairly substantial in terms of volume, potentially as much as 30,000 barrels/day when it comes on line in 2018. It is similar in scope to CD5, except the bridges don't have to be built. It will cost about \$900 million, and 500-600 people will work on it during construction.

Lastly, they have recently announced additional investment in the viscous oil field in the Kuparuk River Unit called the West Sak and they are drilling some additional wells off of an existing 1 H drill site in Kuparuk where additional gravel will be put down and then they will move out of the core area of West Sak into an area called the Northeast West Sak. They expect about 9,000 barrels/day from that investment in 2018; about 150 people will construct it for about \$450 million.

MR. JEPSEN explained that these developments represent the tip of the iceberg: ConocoPhillips is to a point where they are ready to submit permits and start talking actively with their partners about funding and putting the process in place to take them to executive management for funding later this year. They are working on more projects, but those have not been matured to the point where they can be talked about publicly.

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The production profiles for the three projects are more than 40,000 barrels/day of new production in 2018; if CD5 is added, that is another 10,000 barrels/day. So, the investment is significant in terms of billions of dollars and more employment. In retrospect, some good things have been announced since SB 21 passed and he thanked them for passing it. However, if the referendum passes, they will have to go back and take a much harder look at all of these projects. It would have a very negative impact.

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SENATOR FRENCH reminisced about CPF 1 at Kuparuk (slide 4) where he had worked for eight years, and said that he viewed the \$400 million worth of renewal projects Mr. Jepsen talked about spending in 2014 to replace the seawater line, the pigging, and other renewal projects as maintenance projects, which he supported. He was glad they could talk about them in the open this year, because last year maintenance was a horrible thing to be spending money on. Now, it's okay, because SB 21 passed. He asked Mr. Jepsen to comment on future maintenance-style projects ConocoPhillips will be doing, not only at Kuparuk, but at other investments.

MR. JEPSEN responded that ConocoPhillips has always talked about how much money they spend on renewal or maintenance projects, so he disagreed that they were coming out of the closet, but he just didn't know what was coming down the road. To some extent it depends upon what kind of issues are uncovered, as they saw some corrosion in this line and it became time to replace it. This is a replacement of a big piece of pipeline, not just a repair.

He added that these oil fields are beyond what their expected lives were. They have been here about 40 years and hopefully, they will be here another 30-40 years, and he thought over time bigger equipment will be replaced on the North Slope, because they have outlived their useful life. He thought they would continue to see a fair amount of investment on maintenance projects on the North Slope, as well as more employment.

SENATOR FRENCH clarified that he wasn't aiming his maintenance remark at Mr. Jepsen or anyone in the industry, but it was aimed mainly the debate heard in the building last year about passing the bill and how somehow maintenance was bad. He apologized if it came out wrong. He turned to a more substantive point on page

7 where "the rubber meets the road" and asked which of those projects were not economic under ACES.

MR. JEPSEN responded by asking to go back to their conversation from last year in which he described how ConocoPhillips makes investment decisions. They look at a number of economic metrics: MPV, ROR, and cash flow, and one of the biggest issues under ACES was that it really captured cash flow. When you get to a certain point, basically all the upside went to the state. That put investment in Alaska at a serious disadvantage, because other places had better investment climates. That's what the debate over ACES was all about: progressivity really killed the investment climate in Alaska. There was no price sensitivity; as the price goes up they didn't make any more money. SB 21 changed that.

SENATOR MCGUIRE stated her concern wasn't that the industry was spending money on maintenance, but rather that the state wanted them to spend more on drilling and production. That was the point of SB 21 for her; but maintenance is important, too.

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SENATOR MICCICHE related how some of his constituents enjoyed the benefits of SB 21, which was manifested by keeping more employees working in the winter. He asked if the job numbers on page 5 and the projects number on page 7 was significantly higher since passing of the new tax regime, and would they be adversely affected significantly by going back.

MR. JEPSEN answered that ConocoPhillips will have a substantial maintenance and renewal program for the foreseeable future. The thing that's different is CD5 has 600 jobs, and it is a proxy for all the other projects he talked about. The difference is in those 600 or so jobs because of the projects that are moving forward since SB 21 was passed. He thought a decrease in employment on the North Slope would be seen if SB 21 would be repealed.

CHAIR GIESSEL thanked him for his comments and invited Ms. Wong to testify for ExxonMobil.

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SOPHIA WONG, Manager, Infrastructure and Pipeline Project, Pt. Thomson Project, ExxonMobil Development Company, said she had been working on the project since 2009. They are currently wrapping up their second winter season of construction and have

completed a number of infrastructure milestones that demonstrate their ongoing commitment to Alaska's energy future.

She said although Pt. Thomson is an initial production system, the estimated cost for the infrastructure, for the gas processing facility and the wells, is expected to be in the range of \$4 billion. To date, ExxonMobil has invested about half of that, of which about 70 percent has been spent in Alaska.

ExxonMobil is excited about what the project is contributing to Alaska. First, it is opening new portions of the North Slope, second they are establishing infrastructure for future development, and they are investing in Alaska's human resources.

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MS. WONG said one of the things that makes Pt. Thomson unique, even on the North Slope, is its location. It is about 60 miles to the east of Prudhoe Bay and the TransAlaska Pipeline (TAPS), and right next to the Arctic National Wildlife Refuge (ANWR). A challenge they face is producing this large resource space in a safe and environmentally sound manner. However, they have taken steps to ensure a minimal environmental footprint with summer coastal barging, winter ice roads, and comprehensive mitigation measures to minimize impact on the tundra, wildlife, aquatic resources, and subsistence activities.

She said that the Pt. Thomson project will provide access to the Thomson Sand Reservoir, which contains an estimated 8 tcf/gas and 200 million barrels of condensate, which is premium liquids like diesel (about 25 percent of the known reserves of gas on the North Slope). Pt. Thomson builds on the expertise and success of other North Slope developments, like Prudhoe Bay, and ExxonMobil's Arctic experience from around the world is helping to execute the project.

The initial production facility consists of three primary wells: one producer and two injection wells, which are directionally drilled from shore to minimize the environmental footprint. The gas processing facility is going to have the capacity to cycle 200 million cubic feet of gas and produce up to 10,000 million barrels per day of condensate. They are also building a 12-inch export pipeline linking Pt. Thomson to the Badami common carrier pipeline.

MS. WONG stressed that the 10,000 barrels per day is only the initial amount of condensate. When completed the pipeline has the capacity to transport 70,000 barrels per day; so ultimately

Pt. Thomson is a double win. It's gas for the LNG project and increased throughput for the TAPS. Additionally, the Pt. Thomson project establishes the critical infrastructure for future expansion that is essential to Alaska natural gas commercialization.

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She showed them a picture of the site back in October 2012 when the Corps of Engineers issued their main 404 permit; it was just a photo of a 13-acre "rig matts," a small helipad, and two orange wellhead covers for the PTU 15 and 16 wells they drilled in 2010. She showed them another picture taken a few months later when they were barging in two sealift modules for permanent fuel storage. One year later another picture showed a little village there. She pointed out the key components of the service pier where they offloaded the four diesel storage tanks, and a permanent operations camp, as well as their telecommunications tower. To the left were the temporary construction camps.

A photo taken a couple of weeks ago showed the ice road right-of-way to the export pipeline and the west gathering line to the central pad facilities. Another photo was of the central pad and its continued expansion of additional camps for the pipeline scope of work, two cold storage tents, and foundations for two buildings: one a warehouse and the other for ACS maintenance.

MS. WONG said they had laid about 750,000 cubic yards of the million yards that they are doing the next season, so they are in good shape. They just started the foundation work for the warehouse and ACS buildings and the sealift bulkhead.

In the 2015 winter season, she said ExxonMobil will have the drill rig come back to the central pad recompleting the PTU 15 and PTU 16 wells, as well as drilling the disposal well. Piles will be installed for all the process modules.

MS. WONG said one of the significant milestones coming up will be in the summer 2015 when they barge in four large sealift modules about the size of a football field. Those will be connected like legos in what is called "plug and play." By 2016, they plan to produce through the initial production system and into TAPS. She remarked that the picture makes it look simple, but it will take strong contractors and a strong team to execute the project, and including their permanent operations camp at the end of the project, they will have leveraged the skilled

workforce and available facilities to build over 130 truckable modules in Alaska.

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The Pt. Thomson "contractor tree" indicated that 92 companies were involved with the project, 73 companies were Alaskan.

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MS. WONG highlighted a few of the contractors: Alaska Frontier Constructors (AFC) built a 48-mile ice road from Endicott to Pt. Thomson. This ice road was used to transport equipment, personnel, and materials to the Pt. Thomson site. Fifteen miles of ice roads were built around the central pad to support construction. AFC is an Alaskan company that constructed and maintains ExxonMobil's ice road infrastructure, which is critical to supporting construction during the winter. It is also extending the central pad to about 50 acres and expects to haul an additional 1 million cubic yards of gravel. They are going to help them finish the sealift bulkhead that will be used to offload the facility modules in the summer of 2015, as well as helping install the foundations for the other buildings.

MS. WONG recapped that one of the things AFC recently concluded was the construction of their west pad and they are now close to finishing the road to the west pad including the three bridges. At peak, just a few weeks ago, AFC had 240 people at the central pad; they are a key player in all fronts of their infrastructure development.

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MS. WONG highlighted a second contractor, Doyon Associated that is helping ExxonMobil build their pipeline. They are building upon the work they did in installing approximately 2,300 vertical support members between Badami and Pt. Thomson. Just a couple of weeks ago at peak, Doyon had about 315 people working on the pipeline scope. ExxonMobil is anticipating by the end of this month that the 22-mile 12-inch export pipeline will be completed; that includes 27 miles of ice pads along the pipeline route. All the double joining work for this pipeline was completed in the last few months in Fairbanks by Flow Line, another Alaskan company.

MS. WONG highlighted a third company, Pacific Rim Logistics (PRL) that is their main logistics provider at Pt. Thomson; they manage the flow of people, material, and equipment. PRL has seen tremendous growth over the last few years and has 120 people at

site and 200 more working for their sub-contractors, of which 95 percent are Alaskan.

She said that last Saturday she attended the open house for PRL's new facility in Kenai that combined with remarks from the Ketchikan Visitor's Bureau, showed how their work on the North Slope is impacting the whole state.

As ExxonMobil completes the infrastructure and the pipeline work, they will transition to focus on installing the gas processing facilities. Another Alaskan company, CH2M Hill will begin to mobilize and install the flow lines from the wellheads to the facility. They will also do the facility module installation in 2015 (in previous graphics).

Morris Engineering based in Juneau provided the design and construction oversight services for all the construction of their airstrip, Ms. Wong said, and Builders Choice Incorporated out of the Matanuska Susitna Valley constructed their Pt. Thomson permanent operations camp, which currently houses 200 people and will be the long term housing for the operations team. Builders Choice has expanded to over 300 employees with operations in the Dakotas, as well.

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At peak manpower, that happened just a couple of weeks ago at central pad on the North Slope, they had more than 729 positions; a lot of those positions are rotational. Statewide they have about 1,200 positions of which 85 percent are Alaskans; they use 92 companies of which 73 are Alaskan.

In summary, Ms. Wong said, she had showed them the progress made at Pt. Thomson to complete the infrastructure milestones needed for first oil into TAPS by early 2016. Through this infrastructure, they are making investment toward commercialization of the gas, and through the support and hard work of all of their contractors it is clear that Pt. Thomson is an Alaskan project, built by Alaskans, for the benefit of Alaska.

SENATOR FRENCH commented that his tour of Pt. Thomson was one of the highlights of 2013. The money that is being spent is impressive and the attention to safety is as high as he has seen in his time on the North Slope.

SENATOR MICCICHE asked what the ultimate hopes are for Pt. Thomson.

MS. WONG answered that because SB 21 passed it provides fiscal stability the industry needs for future phases at Pt. Thomson and other Alaskan opportunities. ExxonMobil has done some of the pre-investment as the pipeline is designed for up to 70,000 barrels per day (BPD), and that is the hope. The prize is to be able to produce 8 tcf of gas, enough energy to heat all homes in Alaska for more than 88 years.

SENATOR MICCICHE said he appreciated her testimony.

CHAIR GIESSEL thanked her and then welcomed Frank Paskvan to comment for BP Alaska.

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FRANK PASKVAN, Alaska Technology Manager, BP Exploration Alaska Inc., Fairbanks, Alaska, related that he had been doing reservoir engineering and oil field development planning for 29 years. He was born and raised in Fairbanks and went to the University of Alaska for a petroleum engineering degree and is on the University Foundation Board of Trustees and the College of Engineering and Mines Advisory Board. His report was based on a snapshot of their plans, which are subject to change from time to time.

BP is actively investing on the North Slope oil fields; they are acquiring new seismic data in the Northern Prudhoe Bay field and are adding 2 new rigs which will bring on 200 new jobs and \$1 billion over 5 years. They are currently operating seven rigs on the North Slope and that will bring it up to 9. In addition to the rigs, BP is investing in new development technology completions, which will help advance their developments in the challenging oil fields like the Sag River resource.

MR. PASKVAN said BP had started development drilling in Milne Point in 2014 and are in the appraise and select phase of engineering for the West End of Prudhoe Bay with has potential startup in 2018, a \$3 billion investment, with peak production estimated at 40,000 BPD. In addition to the new facilities, they are also making major facility investments committed to safe and sustainable operations. For example, the turnarounds in 2014 are a substantial piece of work; they are employing 700 people on the North Slope to deliver that work, which took two years to plan for. An example of that would be the GC2 module built at Nana's Big Lake facility (79 jobs at \$13.5 million with a potential of 2,000 BPD).

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All in all BP's capital investment increased in 2014 by 25 percent to \$1.2 billion. This includes a 40 percent increase in capital spend for activities that increase oil production, namely drilling well work and major projects.

Slide 3 showed the Prudhoe Bay and Milne Point Units where most of his discussions today centered. They are acquiring seismic data in the Northern Prudhoe Bay offshore area this summer followed by an onshore program this winter. He said BP operates over 1,600 wells within the Prudhoe Bay footprint and keeps seven drilling rigs running there 24/7/365. He said they also have a drilling rig restarting the development at Milne Point.

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MR. PASKVAN explained that seismic data is kind of like an ultrasound image; it lets them image and remotely assess the potential oil field drilling locations. It takes a few years to go from the data acquisition through the processing, interpretation, and development planning stages before actually starting the development drilling that follows from that.

The first well based on the 2014/15 data acquisition may be starting in 2017. The seismic acquisition should involve 150 jobs and around \$178 million in spend, and image across four different production horizons, which have about 55 million barrels of resource potential.

He explained that the Prudhoe Bay fields are close to the shoreline; some are onshore and extend into the near shore region. So, the seismic survey acquisition plan, therefore, is both an onshore and an offshore program. The offshore part uses boats for deeper water and an "Arctos vehicle" for the shallower water. BP will acquire 190 square miles of offshore data this summer and around 220 square miles during the winter season to image the area accurately enough to enable precise well planning and development assessments.

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MR. PASKVAN said the drilling and well operations are one of the most visible and significant areas of investment and that BP operates a fleet of well-service equipment with which they perform over 500 rate-improving jobs per year in those 1,600 wells. Two of their seven rigs are workover rigs, which are used to repair and maintain existing wells, and two coil tubing drilling wells, an Alaska developed and matured technology that consists of a continuous coil of steel tubing which can be more

than 15,000 feet long that goes down through the existing wellbore and drills to a new target that can be up to a half mile away from the parent wellbore. It's a very efficient way of accessing targets and improving oil rate from within the legacy field.

BP has three rotary drilling rigs, which drill new wells from the surface, or they can drill side tracks similar to the coil tube drilling process. With this fleet in 2014, BP plans to drill up to 61 new targets and work over 61 new wells. They have started up three new rotary rigs since 2011, rigs that were built specifically to meet the North Slope needs, and they are planning for another two big rotary wells, which would bring them up to nine rigs. These new rigs would involve 200 jobs and \$1 billion of investment over five years, and will take their rig level from the five rigs in 2012 to nine.

MR. PASKVAN said the logistics of this operation are enormous. One example of this is that the roads have to be specifically built for the size and weight of the drilling rigs. Substantial investments are being made in road upgrades this year to more easily and efficiently move rigs around both summer and winter.

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He said BP had started development drilling at Milne Point and has finished four wells, is going on the fifth, and has two more planned. They plan similar levels of drilling for the next several years. He noted that the last new wells were drilled in 2011, so that activity is picking up there.

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In the West End of the Prudhoe Bay field BP is working hard on the select stage phase of the project. This means they are doing the engineering that is needed to make the best investment choices that will enable them to manage production for the long term on the West End. He showed on slide 6 an image of iPad, the first new pad in Prudhoe Bay in more than a decade. It would add production to two other existing well pads that were shown in the upper right hand side of the image. Plus they are optimizing their facilities by increasing flow line capacity and adding other surface facility equipment. This would collectively add over 100 new wells in the West End of Prudhoe Bay and about 200 million more BPO. West End's potential startup in 2018 with \$3 billion of investment would bring on an estimated 40,000 BPO/day.

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Another very big activity in Prudhoe Bay this year is their planned facility shut downs (turnarounds), which start in July and are expected to last between 30 to 50 days depending on the facility. These are maintenance and system upgrade projects in three major facilities: the biggest being the Central Gas Facility, Flow Station 3 and Gathering Center 2.

MR. PASKVAN explained that these operations are well choreographed and took over two years of planning. They will have 700 people in the field in and around those facilities; the operation is managed so to get the work executed in the minimum amount of time to minimize the production impacts and get it done safely. The kinds of work they are doing during this operation are refurbishing aging compressors, making process and safety improvements, repairing heating exchangers, and replacing old valves to set these facilities up for long-term, smooth-running operations.

He explained how laser point cloud is used to generate images for super accurate measurements. The facility is scanned before doing any design work to very accurately position all of the equipment. Before cutting into any pipes or doing any fabrication or design work, they get that accurate scan and ensure a perfect fit for the new replacement equipment.

MR. PASKVAN summarized that taken together, BP's capital investment has increased 25 percent for 2014 to \$1.2 billion; this includes a 40 percent increase in capital for rate-adding activities.

SENATOR DYSON asked if they are getting into some heavier oil the farther west they go.

MR. PASKVAN answered yes, and those are being evaluated; engineering analysis is being done for the heavy oil. In particular, they learned the heavy oil Chops Pilot at Milne Point S Pad is definitely ongoing to have technical and commercial challenges, mostly because of the artificial lift. This is when a rotating rod runs from a surface drive through the well. However, that abrasive movement with metal on metal rapidly wore holes in the side of the tubing, which was very expensive to replace. So studies are being done to improve the run life.

SENATOR DYSON remarked that he was encouraged.

MR. PASKVAN added, "So are we."

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SENATOR FRENCH went to slide 5 and asked which investments would not be economical to make under ACES.

MR. PASKVAN said that really sits within a different wheelhouse, but as an observer, he could say they are moving ahead with those developments now.

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SENATOR MICCICHE asked if their increased investment happened because of SB 21, and will it be somewhat retracted if the investment climate is less favorable.

MR. PASKVAN responded that the increased investment is real. They are actively planning on getting ready for this equipment. But a change in the business climate would cause them and their co-owners in the ventures to go back and relook at everything under whatever the changes might be.

SENATOR MICCICHE asked how he would compare this rig count to the days when Alaska had very healthy exploration.

MR. PASKVAN replied that it's on a par, at least within BP operated assets, with running 11 rigs in 2006.

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CHAIR GIESSEL, finding no further questions, thanked everyone for their presentations and adjourned the Senate Resources Committee meeting at 5:25 p.m.