

COO REPORT TO THE 2010 ANNUAL MEETING

Good Afternoon Ladies and Gentlemen.

I am very pleased to be here today and provide you with an operations report for Zion Oil & Gas. I joined Zion, full-time, in January 2010, so let me open by thanking the many stockholders who have graciously welcomed me to the Zion family. I also want to thank the staff, management, and directors of Zion who have been nothing less than 'extraordinary' in their encouragement and support of my direction and objectives for the company.

You have come to know Zion as being a 'special company with a special task in a special country'. Let me assure you that this is just no promotional 'tag line'! From my earliest involvement with the company, it became quite clear to me that Zion is indeed a very special company. A company comprised of a small group of dedicated, hard-working individuals who share a common goal. I am both proud and blessed to be part of Zion.

Now, before reviewing the operational details of the past year, let me first comment about an oilfield incident that has been much in the news lately. I'm speaking of course about the explosion that occurred in the US Gulf of Mexico, in April 2010, during the drilling of an offshore well. The resulting impact of this incident continues to play out. The long-term impact on the environment is probably still unknown but, regrettably, could very well be 'substantial'. While the environmental impact is getting all of the focus, it is important to remember that several people have lost their lives as a result of this disaster.

Whether offshore or onshore, oil & gas exploration is a risky business. What we are doing in Israel, drilling 'deep' to depths and rock layers never before penetrated in this Region...is not risk-free. At Zion, we are committed...I am committed...to ensuring the safety and well-being of all those who work at our work sites.

In this regard, my goal is simple: To ensure that all Zion personnel have a personal commitment to safety. The result of such a goal should be an incident and injury-free culture where everybody, everyday, can return home to their families in good health.

Now, let me turn to the Operations Report for the past year.

As Richard mentioned in his report, this past year has seen a significant amount of operational activity for the Company. So let me turn back twelve months and offer you my report of these many activities.

Starting last summer in **June and July** of 2009 (*slide*), we were 'drilling ahead' with the Ma'anit-Rehoboth #2 (or MR-2) well. This well is located in the "Joseph" License Area as can be seen on this map (*slide*). The Joseph License covers approximately 83,000 acres on the Israeli coastal plain between Caesarea in the north and Netanya in the south. We were awarded the Joseph License in 2007 for an initial 3 year term and have recently received a one year extension of the license area to October 2011. Our objective with the MR-2 well was to penetrate and test the rock layers of 'Permian' geologic age.

Why the Permian? Quite simply, the Permian in the Middle East has produced some of the largest reserves of hydrocarbons in the world. Zion's acreage position in Israel, which offers large areas of enclosure for migration and entrapment of hydrocarbons, provides for an excellent opportunity to test the Permian

In June 2009, we were also awarded a preliminary exploratory permit in the area we named the 'The Issachar-Zebulun Permit Area'. I'll have more to say about this area later on in my report.

So with drilling continuing over at Ma'anit-Rehoboth #2, in **August** 2009 (*slide*), we began site work at the Elijah #3 well in the Asher-Menashe License Area. The Asher-Menashe license area covers approximately 79,000 acres and lies due north of the Joseph License Area (*slide*). We were awarded the Asher-Menashe License in 2007 for an initial 3 year term and have recently received a one year extension until June 2011. As with the MR-2 well, the target for the Elijah #3 well was also the deep rock layers of Permian geologic age.

In **September** 2009, we were drilling ahead with our MR-2 well to near our target depth, when we encountered an unexpected geologic fault (*slide*). A geologic fault is a crack in the earth's crust in which the rock on one side of the fracture has measurable movement in relation to the rock on the other side. The resulting effect is that a target rock layer may be shallower or deeper than expected. As it turned out with the MR-2 well, the target rock layer, the Permian, would be much deeper and likely beyond the ability to reach with our drilling rig.

In addition to discovering this geologic fault, we had to ‘sidetrack’ the well due to an unrecoverable ‘fish’ left in the hole. A sidetracked well is purposely deviated from true vertical from the original hole at some point below the surface. A ‘fish’ in oilfield terms is a piece of equipment inadvertently left in the hole. In the case of the MR-2 well, we had several pieces of drill bit cones that broke off down hole and could not be recovered, so the well was sidetracked.

Despite these challenges in drilling the MR-2 well, we did have evidence of hydrocarbon shows in the shallower, younger rocks of Triassic age. This evidence coupled with the detection of fractures in the rock (*reference slide*) gave us good reason to forego drilling any deeper. Ultimately, a number of ‘zones of interest’ were identified in the well and by late summer 2009, we rigged down from the well and plans were underway to test several of these zones for hydrocarbons.

By **October 2009**, the Elijah wellsite was completed, the rig was moved from the MR-2 well, and the Elijah #3 well was spud (*slide*). As I noted previously, the Elijah #3 well is located in the Asher-Menashe License Area. The specific geologic structure targeted by the Elijah #3 well is known as the Nahal Mearot prospect (*refer to slide*) and it is the largest structure within the Asher-Menashe License Area.

One of the greatest uncertainties facing us when drilling the Elijah #3 well was the amount of ‘volcanics’ that would be encountered when drilling through the various geologic layers to the target Permian formation. ‘Volcanics’ are highly unconsolidated debris material from an ancient volcano that became buried to great depths over geologic time. Typically, seismic data (that is, images of rock layers formed by interpretation of sound waves transmitted through the ground) is used to develop a geologic model of the various formations to be drilled (*slide*). In the case of the Elijah #3 well, however, some of the available seismic data was not of the highest quality so, prior to drilling, we were unable to accurately determine the thickness of the volcanics section.

In addition to seismic data, actual data obtained from nearby wells is used in the construction of the geologic model. As with much of Northern Israel, however, few offset wells of sufficient depth exist to provide much in terms of useful data. (*reference slide*) Such is the nature of “Exploration”; we evaluate what little data may exist, make an informed decision on how to proceed, and then act accordingly. So in October 2009, we proceeded with the best information available and spud the Elijah #3 well.

November 2009 found us 'drilling ahead' at Elijah #3 and preparing to move a workover rig on the MR-2 well.

In **December 2009**, we had some exciting news to report. Oil was recovered at the MR-2 well! (*slide*) Here's what happened. We moved in a small, workover rig to do some preparatory 'swabbing' work in anticipation of the upcoming production testing program. 'Swabbing' a well means to manually draw fluid from the well's main production pipe or tubing. During the 'swabbing' operation, performed to verify the tubing was clear of any obstructions, a small quantity of a viscous, black crude oil was recovered from the well. To our pleasant surprise, the tubing was not only clear of obstructions but contained a volume of oil that had seemingly migrated into the tubing from the lower, open hole section of the well.

The subsequent analysis of this oil sample led to a further surprise. The exposed rock in the open hole section of the well is of Triassic age, so naturally our expectation was that the oil recovered from the well would be of a same age. What we found, however, is that the oil 'fingerprint' (or geochemical analysis) did not match other Triassic aged oil but, instead, it was a very close match to oil from a much younger time period, the Cretaceous, and similar in nature to oil recovered by others in the Dead Sea area. (*refer to geologic time scale on slide*)

After much consideration, we currently believe that the oil matured offshore Israel and migrated both horizontally and vertically to structurally higher, but older, Triassic-aged rock. This is only a working hypothesis that will need to be validated over time with more data points. If this theory is correct, however, it bodes well for Israel since the country has a very large extent of late Cretaceous source rock and therefore a large potential source of hydrocarbons.

The excitement we all experienced at year-end 2009 with the recovery of oil from the MR-2 well was somewhat muted by the realities of the exploration business when in **January 2010** our drill bit became stuck in the Elijah #3 well. (*slide*)

I noted earlier that, in preparing to drill the Elijah #3 well, we were uncertain regarding the thickness of the highly unconsolidated zone known as the Asher Volcanics. As it turned out, the section was thicker than originally expected making it extremely difficult to drill through the

'rubble' of the volcanics without having the hole collapse in on itself and sticking the drill bit assembly.

Initially, we were successful drilling through the volcanics section, but eventually we did get the drill bit stuck and subsequent fishing operations were only partially successful before we decided to temporarily suspend the well pending further evaluation.

Ultimately we decided that a new geologic model or interpretation of the sublayers below the Elijah #3 well was needed. To that end, updated seismic data would need to be acquired and processed so that our geologists can use this information as the basis for their revised geologic model for this region. Having a better understanding of the geologic architecture, we can then formulate a plan on how to proceed with the well.

In **February** 2010, we continued to lay the ground work for pursuing new and emerging opportunities across our permit and license areas. (*slide*)

We contracted with GII, the Geophysical Institute of Israel, to acquire new 2-dimensional seismic in our Issachar-Zebulun permit area. This area encompasses approximately 165,000 acres, or about the same area as our Joseph and Asher-Menashe license areas combined. As you can see from the map, the Issachar-Zebulun area extends Zion's petroleum rights from the Mediterranean Sea at Caesarea across the Carmel Mountains to Megiddo and through the Jordan River immediately south of the Sea of Galilee. Zion has exclusive access to this area for the preliminary investigation of drilling prospects through February 2011.

The region within the Issachar-Zebulun permit area with the greatest potential is the Jordan River Valley. Our geologists have identified a geologic 'lead' in this area but unfortunately this area has the least amount of seismic data available to fine-tune this lead into a drilling prospect. So, we are acquiring about 30 km of 2D seismic in this area. That work is currently underway, in the field.

Also during February 2010, our Technical Review Committee reached consensus agreement on the general parameters for our next new well, the Ma'anit-Joseph #3 (or MJ-3) well to be spud later this summer. I will comment more on the MJ-3 well later on but want to point out that, in addition to myself, our Technical Review Committee consists of Dr. Yehezkel (Charlie) Druckman, a Director of the company, petroleum geologist and Israel's former Petroleum

Commissioner; Mr. Forrest Garb, a Director of the company, a veteran petroleum engineer and highly-regarded industry consultant; Dr. Eliezer Kashai, a seasoned petroleum geologist and our VP of Exploration; and Steve Pierce, our Exploration Manager. All told, there is about 200 years of industry experience coming into play when Zion's Technical Review Committee makes a decision affecting our development activity.

Moving ahead to the period between late **February and April** 2010 (*slide*), we conducted the production testing of our Ma'anit-Rehoboth #2 well. As you recall, it was in this well that a small sample of crude oil was discovered during a routine swabbing operation in December 2009.

Prior to beginning the test work on this well, we had narrowed and prioritized the many 'zones of interest' previously identified into several discrete test intervals. In some cases, the testing of one zone would be contingent upon the results of a prior test. So, we would only perform some tests if the evidence from prior testing warranted continuation of our plans.

During testing operations, we would be measuring liquid and gas flows as well as recording down hole reservoir pressures. Having reliable and accurate knowledge about the pressure within the rock layers is critical in forecasting commerciality of potential oil or gas discoveries. To this end, we used first-class oilfield service companies, such as Weatherford and Schlumberger, in our operations to support our testing plans.

Ultimately we tested the three highest priority zones in the well and concluded that commercial quantities of hydrocarbons were not present.

Still, it is important to note a few key 'take-aways' from this well...

- Crude oil was indeed recovered;
- The preliminary analysis of the source of this crude oil suggests the potential for a large repository of hydrocarbons; and,
- We have not yet reached our deep target – the Permian geologic layer – so the potential of this zone is yet unknown

Despite our disappointment in the results of the MR-2 well, we had good reason to cheer when in April 2010 (*slide*) we signed a Memorandum of Understanding with Aladdin Middle East Ltd

(AME) as a first step towards forming “Zion Drilling, Inc.” and securing for future drilling opportunities the 2000 HP rig currently located in Israel.

The signing of this Memorandum of Understanding further builds upon the excellent relationship established between the two companies and creates a foundation for Zion to take its exploration business to a new, higher level of capability.

Moving to the present time, **May to June 2010**, our focus here at Zion has been ‘preparing for the next phase’ of development activity (*slide*).

We have begun the seismic acquisition work in both our Asher-Menashe License Area and Issachar-Zebulun Permit area that will hopefully lead us to a better understanding of the geology beneath the Elijah #3 well and to new development opportunities in the Jordan River Valley.

As requested and expected, the Israeli government granted us one year extensions in both of our License Areas, allowing us to continue our exploratory and development work.

Finally, we continue to move forward with detailed planning and permitting of our next well, the Ma’anit-Joseph #3 well and have signed a contract extension with AME who will serve as drilling contractor for this well.

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That concludes my summary of Zion’s operational activities during the past 12 months. Although the last year did have its disappointing moments, we also had our fair share of notable achievements that set the stage for future success.

So where does Zion Oil & Gas go in the next 12 months? First of all, much of our future development work can only happen if we have the right tools to do the job. Our plan is to establish “Zion Drilling” (*slide*) and secure the 2000 horsepower drilling rig in Israel, on a permanent basis. This will give us the ability to move forward and, we believe, achieve success.

Next (*slide*), we will continue to incorporate technology & scientific principles into our quest for improving our understanding of the complex geology that lies within our exploration areas. The

2D seismic that we are now acquiring in two of our exploration areas is testimony to this commitment.

We will build and refine our queue of development opportunities (slide) so that we have a steady supply of technically viable and operationally executable drilling prospects.

Finally, we remain steadfast in achieving our primary goal and purpose for the company – to find and produce hydrocarbons onshore Israel (slide). To this end, we are focused on ‘drilling deep’ into the Permian geologic layers in the hopes of finally unlocking the treasures that we believe lie within.

...and of course we are hoping these treasures will be substantial (slide)!

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Thank you ladies and gentlemen; it has been my pleasure addressing you this afternoon with Zion’s Operations Report.

I will now yield to Richard for a continuation with today’s meeting.

William Ottaviani

June 2010