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## Introductory Address

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Mr Chairman, Board members, Ladies and Gentlemen: My Name is Gregg Jilson, I am Vice President, Exploration for Curragh Resources Inc, the Licencee. First I would like to introduce our panel of experts who will be presenting information about our ~~new~~ decommissioning plan at this hearing: ~~Mr [unclear] on my right~~ ~~Mr [unclear]~~, Mr Andy Robertson Principal of Stebban Robertson and Kirsten who will be speaking to matters of geotechnical, and geochemical particularly involving acid rock drainage, ~~its~~ its mitigation and treatment of its products.

Dr Robertson is a world leader in his field and has many years background with this site and the decommissioning plan. On his right is Mr David Herpley Senior Hydrogeologist ~~and also~~ <sup>and also</sup> with Stebban Robertson Kirsten in Vancouver B.C. Mr Herpley has been project leader in development of the decommissioning plan particularly compilation of background information, evaluation of alternatives, design of components of the plan and evaluation of the expected performance of the site after decommissioning. Mr Herpley will speak to matters of hydrology hydrogeology and acid rock drainage. On his right is Mr Ted Ferguson of K. Brown Inc in Toronto. Mr Ferguson is

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~~a professional engineer~~ <sup>civil</sup> with geotechnical specialization  
~~and was project leader~~ in development of the Water Recycle and Tailings  
 Deposition Plan Report. Mr Ferguson will  
 speak to matters involving the pit as a  
 tailings deposition site ~~particular~~ <sup>particularly</sup> the decommissioning  
 aspects of that use. ~~and~~ ~~at~~ ~~least~~, tailings  
 relocation particularly capital and operating  
 costs. on his right is Mr Danny Webster  
 a ~~mechanical~~ <sup>mechanical</sup> engineer with extensive experience  
 in relocation of ~~south African~~ tailings  
 deposits for reprocessing. ~~His~~ ~~area~~ ~~of~~ ~~expertise~~ His  
 area of expertise for the purpose of  
 this heavy will be the operational aspects  
 of hydromonitoring of tailings and  
 slurry pumping to the mill. To his  
 right is Mr Alan Stewart of  
 P. Iwan Associates a <sup>Professional geotechnical</sup> ~~geotechnical~~ engineer with  
<sup>specialty in geotechnical and rock mechanics</sup> with many years experience with the  
 walls of the Fao pit who will speak  
 to matters of pit wall stability as they  
 relate to the decommissioning plan.

a poster

specialty in geotechnical and rock mechanics

on the far left is Mr Dick Downs a  
<sup>Professional Engineer and</sup> metallurgist with broad and extensive  
 world wide experience, particularly involving  
 lead-zinc processing. Mr Downs will speak  
 to the retreatment - reprocessing of the  
 tailings in the Concentrator as well  
 as the test work described in our submissions  
 and ongoing. on his right is Mr Godfrey.

Professional Engineer and

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MacDonald Vice President, Metallurgy for Curragh who has ~~an~~ considerable experience in the mineral processing industry and detailed knowledge of the Faro Concentrator, its operations and capabilities and will speak to matters involving the concentrator as it will be employed during reprocessing of tailings.

On his right is Mr Gerry Acott Manager Environmental Affairs for Curragh Resources Inc who is a registered Professional Biologist and is ~~responsible~~ directly responsible for environmental compliance, environmental management and environmental ~~assessment~~ and design at all of our Western Canadian Mines and Projects. Mr Acott will speak to matters of environmental management and monitoring at the site during and after reprocessing and decommissioning.

On my left, ~~Last~~ and by no means least, is Mr Brian Campion Curragh legal counsel. Mr. C is a senior partner of the Whitehouse

As Chairman we have ~~previously~~ submitted ~~copies of~~ ~~several~~ ~~to~~ the ~~Panel~~ ~~members~~ ~~and~~ ~~we~~ ~~have~~ ~~copies~~ of detailed resumes of Mr Curragh's expert witnesses ~~we~~ ~~submitted~~ ~~today~~ and I would like to now submit them law firm of Anton Campion MacDonald & Phillips and his practice is concentrated in the areas of mining & environmental law.

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The Faro site was developed in the late Sixties - It is one of the largest lead zinc mining and milling complexes in the world and has contributed greatly to the economy of Yukon and of Canada.

The Faro site has been going through a period of major change in the last several years as the Faro orebody approaches exhaustion and new mines have been developed to replace Faro as the source of feed to Curragh's Concentrator.

The Faro open pit now has but a few months of ~~life~~ life and the underground mine developed from the bottom of the pit is likewise approaching the end of its reserves, though not as quickly.

The Vanguard Pit is fully developed and is currently supplying a considerable proportion of the feed to the mill.

The Gunn Pit is partly developed and much preproduction stripping remains to be done before it is in a position to take over from Vanguard as the main source of mill feed later this year.

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With the end of mining in the Faro pit comes an opportunity to use the pit for tailings disposal and as a key component in our water management plan. We have previously applied to the Board for authority to so use the pit and after receiving that authorization in an expedient fashion have proceeded to equip the pit for tailings disposal.

Most of the equipment is in place. The very large pumps <sup>needed</sup> have been installed, tailings line laid and only final hook up of pipes and electricity remain before delivery of tailings to the pit can begin later this year. The debarring factor will likely be the extraction of the last underground ore but deposition ~~by~~ ~~the~~ will likely commence in May.

~~The~~ The end of mining at Faro ~~is~~ ~~is~~ also ~~time~~ <sup>to</sup> also causes us to focus on the <sup>eventual</sup> decommissioning of the site. The Board and intervenors have helped carry us through advise and guidance on technical matters and schedule. As required by ~~the~~ our licence we have submitted a Plan for

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the decommissioning of the Rose Creek  
tailings facility. We have also considered  
closure of the Geo Pit tailings facility  
in the Wahr Keyche and Tailings Deposition  
Plan. These reports will be referred  
to as the SRK and Kilborn Plans  
respectively however these are Curragh  
Plans, Curragh was actively ~~is~~ involved  
in the development of them and  
supports and accepts the recommendations.  
~~It is we have id. we really~~  
~~submitted an overview of~~

These are not the only plans for closure  
of the Geo site that Curragh has  
submitted. In 1988 we prepared a  
Plan for decommissioning of the open pit,  
Waste Rock dumps, haul roads, diversion  
Fresh Water reservoir/dam. In 1989  
we submitted a plan dealing with the  
concentrator and various other pieces  
of infrastructure.

To tie all these plans together and  
provide ~~an~~ a synoptic view of the  
site we submitted a document entitled Geo  
Decommissioning Overview of the Environmental Plans. This  
document is not in itself intended to  
be a decommissioning plan but it seeks  
to explain the plans in ~~an~~ less technical  
fashion than any of the previous

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reports and it attempts to resolve any conflicts between the various Plans submitted. The technical appendices to that overview provide more information relevant to the plans before the Board. Appendices A, C and D provide additional detail in key areas of the Tully's Desalting Plan and Appendix B, ~~on water~~ <sup>new</sup> on ~~water~~ water treatment options, is an update of the water treatment considerations in the 1988 ~~Water~~ Pot and Drays Plan, which adopted treatment as a contingency for water quality management.

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Our plan for the decommissioning of the Fero site has evolved gradually over the years we have owned the Fero Mine. Decommissioning a site as large and complex as Fero is no small task. It is a daunting undertaking. The site contains 100 million cubic metres of rock waste - 200 million tonnes. That's enough to cover the whole of downtown Whitehorse from here to the River Bow as high as the top of the Clay Cliffs.

The site also contains <sup>nearly</sup> 50 million tonnes of tailings in an impoundment 3km long and ~~1/4~~ 3/4 km across. A pit 1.5km x 1km and over 300m deep.

Some of the rock waste and all of the tailings are acid generating.

The site was <sup>initially</sup> developed at a time when environmental concerns were not as prominent nor <sup>were</sup> the issues so well understood as today. &

The evolution of tailings dam construction is a good example: in 1969 tailings were deposited behind conventional spigotted dams built of ~~course tailings~~ <sup>course tailings and</sup> keyed ~~by~~ into mine waste berms. By the mid seventies an earthen dam partly built from tailings was constructed and in the early eighties a well engineered, highly instrumented, ~~tail~~ cored earth fill dam was built to retain tailings. This evolution is a good example

③  
of the response of industry and regulators to the environmental challenges of the last three decades.

Just how we retrofit an ~~accept~~ environmentally acceptable solution to this situation and still remain in business is no small challenge.

We have tried to resolve the issue of mine decommissioning in a novel and productive fashion. To create a plan which addresses the issues, provides safety security and stability (physical and chemical) and yet still remains within our financial capabilities.

We believe we have accomplished our goal and done it in a way which is consistent with the Government of Canada's intention to (and I quote from Bill C13) "to promote sustainable development and thereby achieve and maintain a healthy environment and a healthy economy."

Our proposal is consistent with the three R's of the environment. The plan represents an appropriate environmental solution - an example of turning a waste into an asset which

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covers the cost of cleanup. We hope the board and intervenors will agree that our approach is a good one and that it is very much in the public interest to adopt solutions ~~to~~ such as this to environmental cleanup.

The plan is to remove a substantial portion, at least 70%, and possibly more, of the tailings from the Rose Creek Valley. To reprocess the tailings to remove some of the residual lead and zinc they contain and produce a commercially marketable bulk concentrate. To deposit the resulting secondary tailings in the Fan pit, a safe secure and water tight rock bowl where they can reasonably be expected to remain beneath a water cover safe from oxidation and acid generation.

The removal of tailings would be by hydro-montary in a closed circuit operation. Water quality management will incorporate lime addition in the mill to raise pH thus lowering metal solubility.

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Tailings will be reprocessed in the existing fine concentrator to recover a bulk concentrate rather than two selective concentrates as is done today. The concentrator ~~will be~~ flow sheet will be revised using <sup>largely</sup> the components that exist today. This pit will be twice that currently.

The bulk concentrate will be ~~marketable~~ <sup>saleable</sup> on world concentrate markets and the revenues from sales <sup>at reasonably foreseeable prices</sup> will cover cost of tailings relocation, reprocessing, transportation and environmental management.

We have separately allowed for capital items such as spillways, dam removal or upgrading as these items may not be covered by revenues from reprocessing. Our capital estimates have been checked by DIAND's consultants and found to be reasonable.

Our reports provide an assessment of water quality and quantity from the components of the decommissioned site. We do not yet have a full and complete water quality model however

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It is clear that the loadings from the parts of the site we have considered are so low that they are unlikely to raise environmental concerns.

Not all tailings in Rose creek valley would necessarily be reprocessed, since the lower grade fine and more distant tailings behind the Intermediate dam ~~would~~ may remain. What does remain will be scarce beneath a water cover behind the intermediate dam.

This would all be happening after hard rock reserves are exhausted and accumulated stock ~~piles~~ piles are depleted in what we currently envision as the year 2008. Of course new mines could be found which will extend that time frame. Reprocessing would take 7 or 8 years if done continuously thus could be finished by 2018 and the site completely decommissioned by 2020.

Mr Webster will now provide some detail on his specialty hydromining of the tailings

10 min

Mr Downs will now talk about the reprocessing in the mill and take us through the preliminary test work and operations.

10 min

Dr Robinson will now talk about an exciting new area of biological water treatment which while not currently part of our plan, offers considerable potential for the base site

10 min

~~As~~ Mr Keath will now discuss the environmental management of the site until reprocessing is completed and the monitoring that will go on afterwards

We believe the plan we have described is a good one. It is both technically and financially feasible.

We are cognizant however of the fact that our sampling of the tailings is ~~very~~ preliminary and that we have ~~only~~ conducted only preliminary test work.

The results are encouraging and lead us to firmly believe that a marketable bulk concentrate will be produced. We see this as a base case which will get better as we refine it. We are confident that the prices

We are confident that our sampling and test work need to be refined

we expect will be realized since lower prices will lead to a degradation of world productive capability, reduction of supply and ultimately a price rise to stimulate new supply to meet demand

We are convinced that the demand will be there for zinc as it will continue in its role as the protector for steel.

We appreciate that the general public and government are not accustomed to dealing with risk the way that many companies must. The risks ~~are~~ inherent in this plan are real - they involve metal price projections and cost projections. We will

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be finalizing these projections when we prepare a Feasibility Study for reprocessing and at that time make a decision if it is prudent to proceed with the project. We are <sup>confident</sup> ~~convinced~~ the decision will be positive.

It is a recurring theme of the interventions that people are uncomfortable with the risks. There have been many requests for ~~for~~ a contingency plan.

Some of these requests focus on removing all the tailings others just removing the tailings irrespective of reprocessing.

I wish to make myself perfectly clear on the matter of relocation without reprocessing. It is not an option we can take seriously or will consider; there are 50 million tonnes of tailings - even a few cents ~~become~~ per tonne becomes many dollars. We have not estimated <sup>costs for</sup> relocation alone but PBK has ~~and~~ for Diand they arrived at a \$42 million overall cost and it appears <sup>that they</sup> did not consider addition of lime to mediate metals in water. This could add another 40 to 60¢ a tonne. We could be looking at a \$60 million price tag - this is

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not within our capabilities. We have stated this before. ~~before~~

~~We recognize however that despite our enthusiasm for this project it is conceivable we are alone in that~~

Despite our enthusiasm for the project we agree a contingency plan is called for. We propose that the contingency will be Alternative 4 in the Down Valley decommissioning plan or the SRK report. This contingency ~~plan~~ is well described in that report and the appendices. Conceptual design is provided and the contingency is costed.

Our position is that we will continue with our feasibility study into reprocessing ~~and~~ - should that study reveal that reprocessing is not feasible then we will implement ~~option~~ <sup>Alternative 4</sup>

Alternative 4 involves a water cover behind the immediate dam and composite water saturated covers on the old and second impoundments. These ~~water saturated~~ covers <sup>have been</sup> ~~are being~~ tested for the last several years in our

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tailys pond.

Dr Robertson will now describe the covers application as well as the research behind them and comment on trends in developing acid rock drainage mitigation particularly at the Fox site.

10 min for Andy

Are continuing with cover acknowledge that DIAMOND is helping fund as part of the overall program.

I trust the Board and interviewees will find our proposal a full and complete approach to the site and that it will provide a safe and secure site into the future.

That concludes ~~our~~ <sup>our</sup> presentation of the plan. Thank you for your patience.