

11 November 2015

## ASX ANNOUNCEMENT

# SIGNIFICANT MAIDEN SOP RESOURCE of 29Mt at LAKE WELLS

The Directors of Wildhorse Energy Limited (**Wildhorse** or **Company**) are pleased to report the Company's maiden JORC Mineral Resource estimate from the Lake Wells Project, totalling 29 million tonnes (**Mt**) of Sulphate of Potash (**SOP**). The resource is calculated only on the upper 16 metres of the lake, with over 79% in the 'Measured' category.

This initial shallow resource confirms Lake Wells' potential to host a large, high grade salt lake brine project to produce highly sought after SOP for domestic and international fertiliser markets.

### Highlights:

- > The total Mineral Resource Estimate (**MRE**) at Lake Wells of **29 million tonnes** (**Mt**) of SOP, with **90%** classified as **Measured and Indicated**.
- > The **Measured** SOP resource estimate, totalling 23 Mt of SOP, reports an average potassium concentration of 4,009 mg/L:

Classification	Bulk Volume (Million m³)	Porosity	Brine Volume (Million m <sup>3</sup> )	Average Potassium Concentration (kg/m <sup>3</sup> )	Potassium Tonnage (Mt)	K₂SO₄ Tonnage (Mt)	
Measured	5,427	0.464	2,518	4,009	10.1	23	

- > The Mineral Resource Estimate confirms that Lake Wells is one of the largest undeveloped salt lake brine projects in the World.
- > A Scoping Study will begin shortly to examine the economic viability of the Project.
- > The Mineral Resource estimate is based on an average depth of only 16 metres below surface.
- > Mineralisation remains open at depth across most of the Lake. An aircore drilling program is currently underway to test the extent and geology of the brine pool at depth.

Wildhorse's Executive Director, Jason Baverstock, said "The successful completion of our shallow drilling program and estimation of such a high quality mineral resource estimate, prepared in accordance with JORC, is a major step forward in demonstrating the potential of Lake Wells to support a substantial SOP brine project. The potential for an even larger resource at depth, as well as the Project's inherent location and infrastructure advantages, indicate a really exciting future for the Project and the Company"

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#### Mineral Resource Estimate

Following the completion of the 2015 Shallow Core Drill Program, the Company engaged an independent hydrogeological consultant with substantial salt lake brine expertise, Groundwater Science Pty Ltd, to complete the maiden Mineral Resource Estimate (**MRE**) for the Lake Wells project as set out in Table 1 below.

Classification	Bulk Volume (Million m³)	Porosity	Brine Volume (Million m <sup>3</sup> )	Average Potassium Concentration (kg/m <sup>3</sup> )	Potassium Tonnage (Mt)	K₂SO₄ Tonnage (Mt)
Measured	5,427	0.464	2,518	4,009	10.1	23
Indicated	775	0.464	359	3,806	1.4	3
Inferred	1,204	0.464	558	2,394	1.3	3
Total	7,406	0.464	3,436		12.8	29

#### Table 1: Lake Wells Project – Mineral Resource Estimate (JORC 2012)

#### Measured Resource Estimate

The Measured resource estimate of 23 Mt is confined to the area of the lake playa within the granted exploration licenses and constrained to within 3,800 m of drillhole data points.

#### Indicated Resource Estimate

The Indicated resource estimate of 3 Mt, is confined to the area of the lake playa for which a drill spacing exceeding 3,800m but within 5,000m has been satisfied.

#### Inferred Resource Estimate

The Inferred resource estimate of 3 Mt, is confined to the area of islands within the lake playa. Analysis of the available drilling data from three islands indicates that the shallow brine beneath islands is diluted and the depth of dilution extends approximately 14 to 18 metres ( $\mathbf{m}$ ) below the water table surface, resulting in a significantly lower average potassium concentration.

#### Total Resource Estimate

The total resource estimate of 29 Mt is hosted within approximately 7.4 billion cubic meters of lake playa sediments with an average thickness of 15.5 metres beneath 477 km<sup>2</sup> of lake playa surface.

The estimated tonnage represents the in-situ brine with no recovery factor applied. It will not be possible to extract all of the contained brine by pumping of bores or trenches; the amount which can be extracted depends on many factors including the permeability of the sediments, the drainable porosity, and the recharge dynamics of the aquifers.

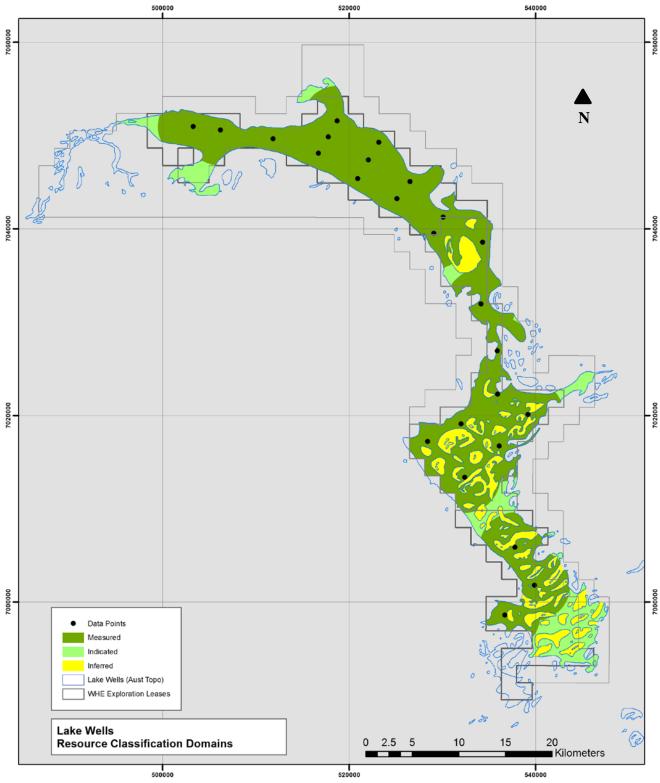


Figure 1: Lake Wells Resource Classification Domains

## Lake Wells Project

The Lake Wells project is located in the Northern Goldfields of Western Australia approximately 200 km north of Laverton. The area is well sourced by sound infrastructure, including the Great Central Road, the Goldfields Highway, the Goldfields gas pipeline and the railway sidings at Malcolm and Leonora.

The Lake Wells Project comprises 1,126 km<sup>2</sup> of granted Exploration Licences covering the Lake Wells Playa, and substantial area immediately contiguous to Lake Wells.

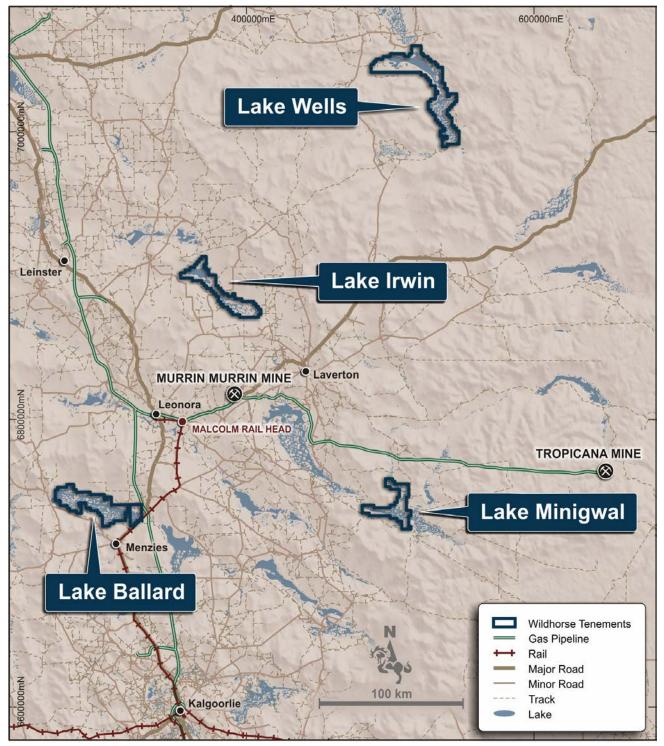


Figure 2: Map of Western Australian project locations

## Geology

The Lake Wells project is in the North Eastern Goldfields Province at the margin of the Archaean Yilgarn Craton. The province is characterised by granite–greenstone rocks that exhibit a prominent northwest tectonic trend and low to medium-grade metamorphism. The Archaean rocks are intruded by east–west dolerite dykes of Proterozoic age, and in the eastern area there are small, flat-lying outliers of Proterozoic and Permian sedimentary rocks. The basement rocks are generally poorly exposed owing to low relief, extensive superficial cover, and widespread deep weathering.

Early Tertiary sediments are preserved in palaeochannels within an infilled palaeodrainage system, and are concealed by a sequence of Cainozoic deposits. These Cainozoic sediments underlie the Lake Wells project and comprise the host aquifer for the brine resource.

The shallow geological profile beneath the lake is relatively homogenous. The top approximately 5m comprises slightly coarser grained material due to the variable abundance of evaporite minerals including gypsum sands. Beneath this layer the profile is dominantly clay with some interbedded silt and sand.

In the northern arm of the lake, two holes, LWG007 and LWG024, appear to have encountered shallow basement, interpreted as Proterozoic meta-sediments, at 6.8 m and 6.75 m below lake surface, respectively. Drilling terminated on this material.

Islands are present on the lake surface, dominantly in the southern arm. Holes LWG021, LWG031 and LWG035 were drilled on islands within the lake playa to test geological continuity beneath the islands, and to assess the impact of islands on brine chemistry. The data demonstrates that the islands are a surficial feature, sitting on top of the lake sediments, and the shallow stratigraphic sequence is continuous beneath the islands. Brine beneath the islands exhibits lower concentration at surface, increasing with depth. The data available from three islands indicate that brine concentration increases linearly with depth from approximately 1000 mg/L potassium at surface to a maximum concentration at 14-18 m depth. At depth under the islands, the brine concentration is comparable to the surrounding lake indicating that the dilution effect of islands is limited to the upper brine.

This observation has been made in other salt lakes in the Yilgarn Block and elsewhere in Australia.

#### Area

The lateral extent of the resource is defined by the salt lake boundary as defined in Geoscience Australia's 1:250K topographic dataset. The resource is further constrained by the tenement boundaries which do not encompass the entire lake surface. The total area of the resource is 477 km<sup>2</sup>.

#### Hydrology

The lake exhibits a catchment of 19,000 km<sup>2</sup>, making it the tenth largest salt lake basin in Australia. The total lake area is approximately 440 km<sup>2</sup> yielding a catchment to lake area ratio of 40.

The lake is interpreted to be a terminal groundwater sink on the basis of the large lake surface area and the shallow water table observed at all sites beneath the lake which will facilitate evaporative loss. Groundwater beneath the lake is hypersaline and comprises the brine potash resource.

## **Drilling Techniques**

Drilling comprised drilling 198mm holes using hollow augers and collecting predominately intact core into sealed lexan tubing to preserve moisture content and structure. In total 32 holes were drilled including 2 twinned holes. Of these 4 were cased as 50mm ID water monitoring wells. The average depth of drilling was 16 m. Bulk brine samples were pumped from the drillholes, and core samples were dispatched for laboratory determination of porosity and brine concentration. Drillhole Locations are presented in Figure 4.

The drill program utilised a lightweight auger rig capable of drilling core to the targeted depth. The drill rig was towed by a tracked LandTamer amphibious vehicle with Argo vehicles providing support. The drilling method recovered intact sediment core in 750mm lengths of clear tubing.



Figure 3: Drill Rig in Operation

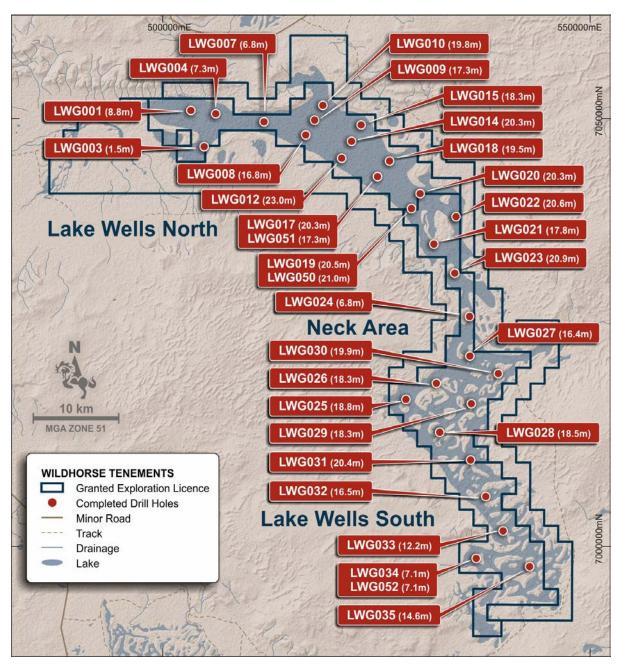


Figure 4: Drill hole location plan.

## Thickness

The top of the resource is defined by the top of the water table. The water table depth beneath the lake surface ranged from 0.2 to 1.2 m averaging 0.47 m. Beneath the islands, which are elevated above the lake surface, the depth to water table ranged from 1 to 2.3 m.

The depth of the resource is defined by the current depth of drilling. All drill holes terminated in saturated material and the resource is open at depth.

The base of drilling below the water table (and hence base of the resource) was interpolated between drill holes by inverse distance interpolation to the fourth power and a search distance of 6,000 m.

## **Sampling Techniques**

All drilling and sampling used for the resource estimate was completed using hollow auger coring. This method allows a number of samples to be taken – split tube, intact tube (both 0.75 m long) and bulk water (brine) samples.

The intact core is recovered using clear Lexan tubes which are sealed shortly after drilling.

Bulk water (brine) samples were taken by pumping from inside the hollow augers using a sample down-hole sampling pump. Holes were purged for approximately three hole-volumes before samples were taken. Brine samples were taken:

- At the base of the coarser shallow sediments
- At the end of the drillhole

Entrained brine in samples were recovered by centrifuging selected intervals of intact drill core in the laboratory. Entrained brine samples were extracted from 0.1m lengths at an average interval of 6.3 m downhole. Intervals were selected in the field and subsequently cut from the core in the laboratory and processed immediately.

Porosity samples are marked up at 0.1 m intervals in the field at pre-determined depths (average interval 3.2 m down hole). Porosity samples were cut from the core in the laboratory and processed immediately.

Core handling was designed to minimise loss by evaporation. Core was contained in plastic tubing during drilling, and sealed immediately upon recovery. The sections of core that were processed were un-sealed only in the laboratory and immediately prior to processing.



#### Figure 5: Intact Core Sample Tubes

#### Drill sample recovery

Core recovery was 79% due to the difficulty of recovering soft, unconsolidated sediment. Brine concentration and porosity is relatively consistent downhole. No relationship is inferred between core loss and brine concentration and hence no sample bias is considered to have occurred.

#### Logging

All drill holes were geologically logged by a qualified geologist, noting in particular moisture content of sediments, lithology, colour, structural observations for each 0.75m length of intact core. Logging was complicated by the core being encased in plastic tubing; texture could only be logged at the end of each tube, where the sample could be inspected. A systematic logging process was developed specifically for this project.

### Sub-sampling techniques and sample preparation

#### Entrained Brine

A 100mm length of core is cut, the sample is removed from the tube and the contents are centrifuged to try and extract solution. When/if any solution is recovered, the pH and SG's are determined and the solutions are diluted to a known volume (to give the assay lab enough sample for assaying) and then submitted for assay.

## Porosity Determination

A 100 mm length of core is cut, the sample is removed from the tube and the contents are placed in a tray and weighed. The sample is then dried at 80 degrees celsius until a constant mass is achieved and then the sample is reweighed. The initial to final difference (mass lost) is the moisture content of the sample.

Conversion to a volume / volume porosity was calculated using brine salinity and brine density data for each drillhole, and using the average particle density measured for a subset of 38 samples.

Total porosity (Pt) relates to the volume of brine filled pores contained within a unit volume of aquifer material. A fraction of this pore volume can by drained under gravity, this is described as the specific yield (or drainable porosity). The remaining fraction of the brine, which is held by surface tension and cannot be drained under gravity, is described as the specific retention (or un-drainable porosity). The form of porosity used in brine resource estimation varies with different proponents of the method. The Company elected to use total porosity to assess the Lake Wells resource.

The mean and median total porosity of 146 samples was **46.4% v/v**. The data is normally distributed with a standard deviation of 6.9 and no consistent spatial trends are observed laterally or with depth. A value of 46.4% was applied in calculation of the brine volume of the resource. The value is consistent with typical values for mixed fine-grained sediment (Fetter, 1996 pp86) and lacustrine clay, silt and fine alluvial sand, (Spitz and Moreno 1996, pp346).

#### Quality of assay data and laboratory tests

Quality assurance checks are described below. Following QA/QC and removal of deficient data as described below the data set is considered suitable for estimation of a potash resource for the project.

#### Inter-lab Duplicate analysis

The Primary Laboratory was Bureau Veritas Minerals Laboratory in Perth. Duplicate samples were sent to two secondary laboratories; Intertek, Perth and ALS Metallurgy, Perth. Differences in analysis are summarised in Table 2.

Parameter	Maximum percentage error <sup>1</sup>	Average percentage error
К	2.2	0.9
SO4	1.1	1.4
Mg	1.9	0.5
Са	8	2.1
Na	4.5	2.1
Cl	2.4	1.6

Notes 1) Calculated as the relative difference from the mean of the analyses.

#### Table 2: Inter-laboratory duplicate analysis

#### Standard Solutions

Two standard solutions were procured and analysed by the primary laboratory and one of the secondary laboratories. Errors in analysis are summarised in Table 3.

Parameter	Primary	Lab (BV)	Secondary LAB (Intertek)			
Reference Range	Low concentration	High concentration	Low concentration	High concentration		
К	-1.7%	-2.1%	0.7%	-0.5%		
SO4	5.7%	8.3%	5.1%	5.9%		
Mg	1.2%	1.2%	1.7%	1.4%		
Са	0.2%	4.1%	-2.3%	2.5%		
Na	0.5%	2.9%	-1.0%	2.1%		
CI	1.9%	2.6%	-2.6%	-1.4%		

Notes 1) Calculated as the relative difference from the reference concentration.

### Table 3: Reference Standard Solutions analysis percentage error

#### Charge Balance

Analysis of charge balance was undertaken. Charge balance checks the sum of all positively charged ions against the sum of all negatively charged ions. These should be equal. Charge balance is calculated as the difference between positive and negative ions divided by the sum of all ions.

For analysis of groundwater systems, the acceptable limit for charge balance error is 5% (Drever 1988<sup>1</sup>, APHA, 1999)<sup>2</sup>. Two samples failed this check and were removed from the dataset.

#### Ionic Ratios

lonic ratios are the ratios of dissolved ions against total dissolved ions, and/or chloride (Chloride is used as the most soluble conservative ion). The analysis is qualitative and looks for anomalous trends in the data. For instance samples where only one parameter is elevated compared to all other parameters. Anomalous results are summarised in Table 4.

Sample	Comment	Action
E300024	Anomalous K	Removed from dataset
E300056	Anomalous Chloride, also fails charge balance	Removed from dataset

#### Table 4: Anomalous results identified through ionic ratio analysis

A sub-population of data exhibits low concentrations of all ions. These are identified as samples from drillholes located on islands. The data are considered valid and reflect dilution of salt lake brines by meteoric water beneath islands.

#### Porosity

Porosity determination is comprised of two mass measurements (one wet and one dry). The laboratory applied standard calibration procedures to scales used by mass measurement.

The dataset was inspected for outliers. Three samples exhibit anomalous high porosity these were removed from the dataset. The remaining data exhibit normal distribution and are consistent with depth.

<sup>&</sup>lt;sup>1</sup> Drever (1988) Geochemistry of Natural Waters. Prentice Hall New Jersey

<sup>&</sup>lt;sup>2</sup> APHA (1999) Standard Methods for the Examination of water and wastewater. American Public Health Association, Washington DC

### Verification of sampling and assay

The brine is relatively homogenous and no significant intersections required verification. The database was checked for transcription errors by comparison to the primary laboratory reports. Assay data were not adjusted.

#### Data point location, spacing and distribution

Data point locations are presented as Figure 4. Drill hole Coordinates are presented as Appendix 1.

Data points are distributed on an approximate 5 km by 5 km grid with some irregularity due to access constraints on the lake surface, and the irregular lake shape.

The drilling data comprises 30 holes (excluding twinned holes) for 477 km<sup>2</sup> area equating to an average drill hole spacing of 4.0 km. Down-hole sample spacing averaged 3.2 m and 6.3 m for porosity and entrained brine samples respectively.

### Orientation of data in relation to geological structure

All drill holes are vertical as geological structure is generally flat lying.

Drilling transects are oriented perpendicular to the Lake orientation in order to provide cross sections across the lake.

#### **Solute Concentration**

The solute (K, Mg, SO<sub>4</sub>) concentration dataset comprised a mixture of samples downhole with overlapping and varying sample intervals:

- Entrained brine samples from consistent 10cm intervals taken from varying depths
- Pumped brine samples from varying intervals and varying depths.

With the exception of brine beneath islands, the brine concentration is relatively consistent with depth. The maximum down hole variance from the mean was 15%, whilst the average variance was 0.4%. Average solute concentration for the full thickness of the brine aquifer penetrated at each drill hole was calculated as a length-weighted average using all samples. Entrained brine samples were assigned the length from the mid-point between adjacent samples (or the water table, or the end of hole). Pumped brine samples were assigned the length of open hole during the sampling event. The resulting dataset was used for interpolation of brine concentration across the lake.

#### Modelling / Interpolation

Solute concentration was interpolated across the lake area using inverse distance weighting algorithm with power of 2, search radius of 3800 m, single search sector, three grid passes, and a requirement for minimum of 1 sample point per sector.

Dilution beneath islands was modelled by applying a linear dilution from the value of the interpolated grid, to a minimum value at surface of 1000 mg/L K. The estimate of the resource beneath islands was assigned a lower level of confidence (Inferred). Resource grade (brine concentration) continuity in this setting is implied rather than confirmed.

The interpolated grid had a cell size of 500 x 500 m and is shown for Potassium in Figure 6. The contained solute in each cell was calculated as the product of the area, thickness (from the geological model), porosity, and interpolated solute concentration for that 500 x 500 m cell.

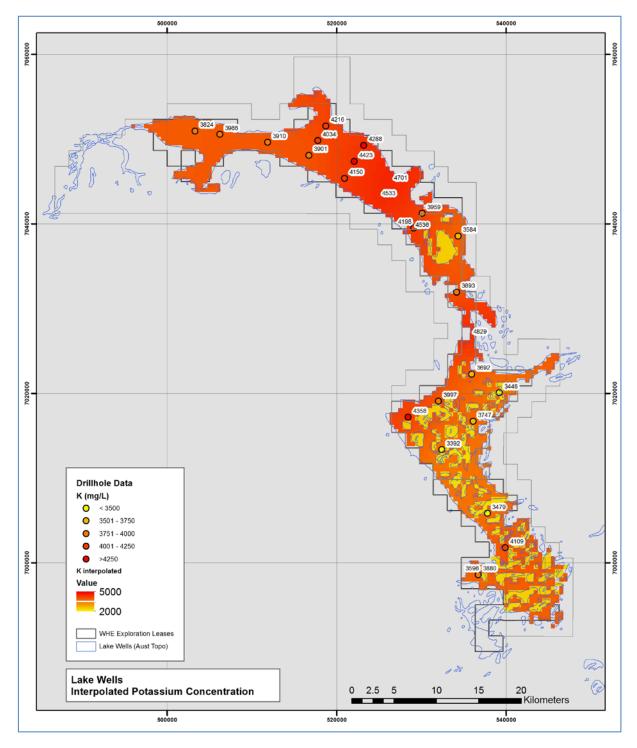


Figure 6: Interpolated Potassium concentration (mg/L)

## Results

The estimated mineral tonnage is presented in Table 5 and 6. The total contained tonnage of SOP is 29 Mt. Of this 23 Mt is assigned a measured resource classification and 3 Mt is assigned an indicated classification.

					Potassium (K)		Magnesium (Mg)		SO4	
	Area (km²)	Sediment Volume (M m <sup>3</sup> )	Porosity	Brine Volume (M m <sup>3</sup> )	Concet- ration (kg/m <sup>3</sup> )	Tonnage (Mt)	Concent- ration (kg/m <sup>3</sup> )	Tonnage (Mt)	Concent- ration (kg/m <sup>3</sup> )	Tonnage (Mt)
Measured	341.25	5,427	0.464	2,518	4.009	10.1	6.886	17,3	19.175	48.3
Indicated	58.50	775	0.464	359	3.806	1.4	6.968	2,5	17.809	6.4
Inferred	76.8	1,203.7	0.464	558.5	2.394	1.3	4.783	2.7	11.350	6.3
Total Measured + Indicated	477	7,406		3,436		12.8		22.5		61.0

### **Table 5: Mineral Tonnage Calculation**

Classification	Sulphate of Potash (Mt)
Measured	23
Indicated	3
Inferred	3
Total	29

#### Table 6: SOP Resource Estimate

#### Mining factors or assumptions

Mining of the resource is assumed to be undertaken by gravity drainage of the brine by pumping from trenches or wells.

#### Metallurgical factors or assumptions

No metallurgical factors or assumptions have been applied.

The brine is characterised by elevated concentration of potassium, magnesium and sulphate elements and distinctly deficient in calcium ion. Such a chemical makeup is considered highly favourable for efficient recovery of SOPM from the lake brines (the main feedstock for SOP fertiliser production), using conventional evaporation methods (Arakel, pers. comm., 2015).

#### **Further Work**

#### Resource definition at depth

The current resource estimate is defined by the depth of drilling which was constrained by drill rig capacity. The resource is considered open at depth and additional deeper drilling to define the extent and geology of the underlying resource is currently underway.

#### Hydrogeological assessment

The primary constraint on production of mineral brines is the proportion of the resource that can be recovered, and the rate at which it can be mined. Brine will drain to wells and trenches at a rate that is controlled by the permeability of the host material. Drainage rates can be optimised but not increased above a natural limit. Further work will focus on determining the hydrogeological parameters of the orebody:

- Drainable porosity
- Permeability
- Recharge dynamics (Rainfall infiltration and groundwater inflow)
- Surface water interaction (Lake inundation)

#### **Competent Persons Statement**

The information in this report that relates to Mineral Resources and Exploration Results for Lake Well's is based on information compiled by Mr Ben Jeuken, who is a member Australian Institute of Mining and Metallurgy and a member of the International Association of Hydrogeologists. Mr Jeuken is employed by Groundwater Science Pty Ltd, an independent consulting company. Mr Jeuken has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity, which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Jeuken consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## APPENDIX 1 - Lake Wells Project Auger Drill Hole Collar and Survey Details

HOLE ID	EOH	SWL	EAST	NORTH	RL	Dip	Azimuth
LWG001	8.75	0.3	503281	7050948	447	-90	0
LWG003	1.5	-	504840	7046721	445	-90	0
LWG004	7.25	0.3	506205	7050557	446	-90	0
LWG007	6.75	0.7	511841	7049619	441	-90	0
LWG008	16.75	0.5	516722	7048077	446	-90	0
LWG009	17.25	0.6	517757	7049815	429	-90	0
LWG010	19.8	0.3	518727	7051540	441	-90	0
LWG012	22.95	0.6	520923	7045358	442	-90	0
LWG014	20.25	0.6	522074	7047346	432	-90	0
LWG015	18.25	0.7	523195	7049252	435	-90	0
LWG017	20.25	0.3	525119	7043218	441	-90	0
LWG018	19.5	0.2	526519	7045037	441	-90	0
LWG019	20.5	0.6	529088	7039485	443	-90	0
LWG020	20.25	0.6	530095	7041226	443	-90	0
LWG021 (located on island)	15.75	1.7	531719	7035328	442	-90	0
LWG022	20.65	0.5	534310	7038541	440	-90	0
LWG023	20.85	0.4	534149	7031928	444	-90	0
LWG024	6.75	0.5	535893	7026879	444	-90	0
LWG025	18.75	0.3	528436	7017175	438	-90	0
LWG026	18.3	0.4	532008	7019067	441	-90	0
LWG027	16.4	0.5	535921	7022247	442	-90	0
LWG028	18.45	1.2	532393	7013339	442	-90	0
LWG029	18.25	0.4	536085	7016679	442	-90	0
LWG030	19.9	0.5	539200	7020066	445	-90	0
LWG031 (located on island)	20.4	2.3	536007	7010114	444	-90	0
LWG032	16.5	0.4	537781	7005827	442	-90	0
LWG033	12.2	0.3	539880	7001764	442	-90	0
LWG034	7.1	0.4	536684	6998577	439	-90	0
LWG035 (located on island)	14.6	-	542903	6997671	442	-90	0
LWG050 (Twin LWG019)	21	0.6	529088	7039483	443	-90	0
LWG051 (Twin LWG017)	17.75	0.3	525112	7043218	440	-90	0
LWG052 (Twin LWO034)	7.1	0.3	536686	6998576	439	-90	0

Abbreviations: EOH: End of Hole SWL: Standing Water Level (below playa surface) ASL: Above Sea Level

## **APPENDIX 2 - Bulk Water Samples Chemical Analysis Results**

HOLE ID	From (m)	To (m)	K (mg/L)	CI (mg/L)	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	SO₄ (mg/L)	TDS (mg/L)
LWG001	0	8.8	3,770	134,400	82,900	476	7,250	24,000	252,796
LWG004	0	7.3	4,070	153,900	88,400	464	7,930	22,000	276,764
LWG007	0	5.8	4,030	147,200	86,900	499	7,600	21,000	267,229
LWG008	0	16.8	3,570	142,400	84,300	540	7,370	19,000	257,180
LWG009	0	17.3	4,150	151,550	94,300	495	7,210	21,000	278,705
LWG010	0	19.8	4,330	154,850	98,900	508	6,790	21,000	286,378
LWG012	0	23.0	3,970	148,800	88,100	513	7,060	20,000	268,443
LWG014	0	20.3	4,245	146,900	89,350	519	7,240	22,000	270,254
LWG015	0	18.3	4,620	158,300	96,000	512	7,140	21,000	287,572
LWG017	0	20.3	4,220	150,200	91,300	432	6,580	24,000	276,732
LWG018	0	19.5	4,910	135,800	83,300	767	5,290	17,000	247,067
LWG019	0	20.5	4,150	145,300	90,100	536	7,290	20,000	267,376
LWG020	0	20.3	4,000	144,500	89,500	483	7,150	23,000	268,633
LWG021	0	15.8	4,070	135,550	83,600	568	5,930	19,000	248,718
LWG022	0	20.7	3,600	151,500	92,800	550	8,380	21,000	277,830
LWG023	0	20.9	3,820	134,650	82,200	674	5,490	17,000	243,834
LWG024	0	6.8	4,860	152,800	95,100	529	5,540	19,000	277,829
LWG025	0	3.8	4,740	143,500	84,000	606	5,140	17,000	254,986
LWG026	0	18.3	4,030	134,500	75,700	682	5,360	16,000	236,272
LWG027	0	16.4	3,540	154,750	90,700	529	8,580	19,000	277,099
LWG028	0	6.0	3,460	146,850	84,900	640	6,630	17,000	259,480
LWG029	0	18.3	3,690	115,950	65,700	847	4,380	14,000	204,567
LWG030	0	19.9	3,500	150,650	86,700	570	8,000	18,000	267,420
LWG031	0	20.4	2,340	95,850	55,600	1,050	4,250	12,000	171,090
LWG032	0	19.9	3,780	153,750	87,700	611	7,250	17,000	270,091
LWG033	0	12.0	4,100	124,600	71,400	969	4,360	12,000	217,429
LWG034	0	6.0	3,590	153,900	86,600	544	8,600	18,000	271,234
LWG035	0	14.6	2,000	73,700	44,100	1,240	3,460	11,000	135,500
LWG050	0	21.0	4,420	152,300	93,800	497	7,300	21,000	279,317
LWG052	0	7.1	3,880	150,050	86,400	592	7,620	18,000	266,542
Average	e of 30 Sam	ples	3,915	141,298	84,345	615	6,606	18,700	255,479

## **APPENDIX 3 - Entrained Brine Samples Chemical Analysis Results**

HOLE ID	From (m)	To (m)	K (mg/L)	Cl (mg/L)	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	SO₄ (mg/L)	TDS (mg/L)
LWG001	7.1	7.2	3,952	145,712	95,330	494	9,138	29,233	283,859
LWG004	5.6	5.7	4,058	160,273	95,353	487	8,250	22,993	291,414
LWG007	1.3	1.4	3,899	148,511	87,193	525	7,869	21,975	269,972
LWG007	6.3	6.4	6,081	169,907	104,806	501	7,333	20,747	309,375
LWG008	10.1	10.2	4,279	149,756	94,774	556	7,809	20,966	278,140
LWG009	3.6	3.7	3,770	149,818	94,743	646	5,934	14,752	269,663
LWG010	1.3	1.4	3,746	145,699	87,114	597	6,751	19,165	263,072
LWG010	10.2	10.3	4,118	152,421	91,019	527	7,043	20,227	275,355
LWG010	19.2	19.3	4,645	166,030	96,349	470	6,653	19,442	293,589
LWG012	11.9	12.0	4,302	161,555	93,070	527	7,595	21,072	288,121
LWG012	20.0	20.1	4,498	157,418	97,361	529	7,672	21,959	289,437
LWG014	1.3	1.4	4,250	150,484	91,439	528	7,696	22,975	277,372
LWG014	11.1	11.1	4,749	156,322	96,959	594	7,519	22,162	288,305
LWG015	1.3	1.4	3,888	152,721	100,213	525	7,295	19,722	284,364
LWG015	9.5	9.6	3,949	154,474	101,483	465	7,599	20,697	288,667
LWG017	13.6	13.7	4,955	153,615	94,151	694	6,937	23,785	284,137
LWG018	1.6	1.6	4,483	151,462	90,122	486	6,983	22,648	276,184
LWG020	0.4	0.5	3,890	147,400	88,400	449	8,370	24,000	272,509
LWG020	3.9	4.0	3,920	145,150	90,800	480	7,600	23,000	270,950
LWG021	14.1	14.2	4,283	144,070	88,194	623	6,425	18,106	261,701
LWG022	4.2	4.3	3,553	143,656	88,047	602	8,032	20,390	264,280
LWG022	10.2	10.3	3,608	146,084	84,391	565	7,392	20,079	262,119
LWG023	14.1	14.2	4,013	143,025	95,635	623	6,148	17,164	266,608
LWG023	18.0	18.1	3,922	137,253	84,593	644	6,022	15,126	247,560
LWG024	0.6	0.7	4,690	150,533	88,504	518	5,976	20,424	270,645
LWG024	2.8	2.9	4,869	151,784	90,307	563	5,680	19,092	272,295
LWG024	6.4	6.5	4,826	150,214	91,434	588	5,769	19,230	272,061
LWG025	1.4	1.5	4,829	144,871	86,922	662	5,312	17,384	259,980
LWG025	11.7	11.8	3,961	141,606	88,132	634	6,635	17,824	258,792
LWG025	17.7	17.8	3,823	147,690	92,089	591	6,603	17,375	268,171
LWG026	1.3	1.4	3,901	124,010	73,768	797	4,587	15,368	222,431
LWG026	16.7	16.8	3,628	147,248	90,910	619	7,256	17,499	267,160
LWG027	0.5	0.6	3,751	152,951	84,846	533	9,166	19,283	270,530
LWG027	3.4	3.5	3,727	155,296	90,889	588	8,958	19,616	279,074
LWG027	5.8	5.9	4,045	157,114	95,513	653	8,711	19,289	285,325
LWG027	16.2	16.3	3,807	157,037	93,271	666	8,328	19,035	282,144
LWG028	1.2	1.3	3,393	148,975	88,297	579	7,220	17,833	266,297
LWG028	14.1	14.2	3,346	145,799	97,996	574	6,931	17,687	272,333
LWG029	1.4	1.5	3,836	118,216	71,096	846	4,420	14,178	212,592
LWG029	16.2	16.3	4,959	198,368	133,403	893	10,414	17,842	365,879
LWG030	0.6	0.7	3,113	151,924	83,025	565	9,081	17,873	265,581
LWG030	2.8	2.9	3,395	158,636	92,309	614	9,074	16,973	281,001
LWG030	18.2	18.3	3,631	158,217	94,152	519	8,948	16,340	281,807

HOLE ID	From (m)	To (m)	K (mg/L)	CI (mg/L)	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	SO₄ (mg/L)	TDS (mg/L)
LWG031	5.1	5.2	2,090	87,035	52,253	1,104	4,148	12,084	158,714
LWG032	1.3	1.4	3,198	148,170	82,222	611	7,052	17,130	258,383
LWG033	1.9	2.0	4,277	129,496	77,935	974	4,594	11,880	229,156
LWG033	11.6	11.7	3,971	134,141	79,884	854	5,218	13,391	237,459
LWG034	1.2	1.3	3,601	155,119	90,198	567	8,729	18,913	277,127
LWG035	1.8	1.9	1,690	65,138	38,691	1,217	3,257	10,285	120,278
LWG050	0.4	0.5	4,450	152,200	92,000	431	7,980	24,000	281,061
LWG050	3.4	3.5	4,250	148,650	90,300	514	7,100	21,000	271,814
LWG050	5.8	5.9	5,056	157,618	110,630	773	8,030	21,412	303,519
LWG050	18.5	18.6	4,726	159,200	100,987	696	7,611	19,900	293,120
LWG050	20.6	20.7	4,429	166,150	98,415	689	7,430	19,700	296,813
LWG050	1.3	1.4	4,480	149,200	91,300	492	7,480	22,000	274,952
LWG050	2.6	2.7	4,510	148,500	90,500	531	7,030	20,000	271,071
LWG050	4.3	4.4	4,530	147,600	95,700	551	7,720	21,000	277,101
Average	of 57 sam	ples	4,063	148,097	90,341	617	7,167	19,214	269,499

## **APPENDIX 4 – Sediment Porosity Determinations**

HoleID	Sample ID	From	То	Brine Porosity (v/v)	HoleID	Sample ID	From	То	Brine Porosity (v/v)
LWG001	P200042	0.5	0.6	50.5	LWG017	P200058	0.59	0.69	49.8
LWG001	P200043	3.25	3.35	46.6	LWG017	P200059	3.35	3.45	43.9
LWG001	P200044	6.98	7.08	38.2	LWG017	P200060	9.97	10.07	50.0
LWG004	P200045	0.58	0.68	42.8	LWG017	P200061	12.985	13.09	45.6
LWG004	P200046	2.985	3.085	36.1	LWG017	P200069	19.08	19.18	36.4
LWG004	P200047	6.915	7.015	41.3	LWG018	P200014	0.33	0.43	43.5
LWG007	P200039	0.58	0.68	55.0	LWG018	P200015	3.35	3.45	46.7
LWG007	P200040	3.59	3.69	36.4	LWG018	P200016	5.06	5.16	42.6
LWG007	P200041	6.1	6.2	38.7	LWG018	P200017	9.37	9.47	50.9
LWG008	P200048	0.465	0.565	43.1	LWG018	P200018	12.41	12.51	41.0
LWG008	P200049	2.632	2.732	42.5	LWG018	P200019	18.4	18.5	34.9
LWG008	P200050	6.57	6.67	37.5	LWG020	P200008	0.422	0.522	52.4
LWG008	P200051	9.05	9.15	31.8	LWG020	P200009	3.788	3.88	47.5
LWG008	P200052	11.92	12.02	40.1	LWG020	P200010	6.35	6.45	48.9
LWG009	P200033	0.58	0.68	46.3	LWG020	P200011	9.25	9.35	46.0
LWG009	P200034	3.59	3.69	48.3	LWG020	P200012	12.3	12.4	46.3
LWG009	P200035	5.84	5.94	48.6	LWG020	P200013	18.46	18.56	43.0
LWG009	P200036	9.6	9.7	43.2	LWG021	P200076	0.59	0.69	32.5
LWG009	P200037	12.1	12.2	41.3	LWG021	P200077	2.84	2.94	57.6
LWG009	P200038	16.59	16.69	36.4	LWG021	P200078	5.6	5.7	49.3
LWG010	P200062	0.6	0.7	44.1	LWG021	P200079	9.5	9.6	43.7
LWG010	P200063	3.25	3.35	50.4	LWG021	P200080	12.1	12.2	38.7
LWG010	P200065	10.35	10.45	58.5	LWG022	P200070	3.2	3.3	47.9
LWG010	P200066	12.6	12.7	48.0	LWG022	P200071	0.5	0.6	47.1
LWG010	P200067	19.35	19.45	41.1	LWG022	P200072	7.535	7.635	43.1
LWG012	P200053	0.55	0.65	47.7	LWG022	P200073	10.33	10.43	32.0
LWG012	P200054	3.315	3.415	31.2	LWG022	P200074	12.6	12.7	41.8
LWG012	P200055	9.344	9.444	43.0	LWG022	P200075	7.535	7.635	53.3
LWG012	P200056	19.07	19.17	52.0	LWG023	P200081	0.59	0.69	45.2
LWG012	P200057	22.1	22.2	42.1	LWG023	P200082	3.37	3.47	39.0
LWG014	P200020	0.35	0.45	42.2	LWG023	P200083	6.13	6.23	42.4
LWG014	P200021	3.35	3.45	44.8	LWG023	P200084	9.5	9.6	45.1
LWG014	P200022	6.4	6.5	57.3	LWG023	P200085	12.56	12.66	41.1
LWG014	P200023	9.75	9.85	37.0	LWG023	P200086	18.38	18.48	37.6
LWG014	P200024	12.706	12.806	63.7	LWG024	P200087	0.65	0.75	56.6
LWG014	P200025	17.75	17.85	37.8	LWG024	P200088	2.6	3	43.9
LWG015	P200026	0.28	0.38	45.5	LWG024	P200089	6.5	6.6	39.9
LWG015	P200027	3.44	3.54	46.4	LWG025	P200115	3.48	3.58	38.8
LWG015	P200028	6.41	6.51	50.8	LWG025	P200116	6.57	6.67	49.8
LWG015	P200029	9.44	9.54	50.8	LWG025	P200117	10.07	10.17	39.6
LWG015	P200030	12.4	12.5	44.7	LWG025	P200118	12.56	12.66	50.4

HoleID	Sample ID	From	То	Brine Porosity (v/v)
LWG015	P200031	17.74	17.84	54.3
LWG026	P200108	0.58	0.68	53.8
LWG026	P200109	3.45	3.55	57.4
LWG026	P200110	6.52	6.62	46.0
LWG026	P200111	9.47	9.57	56.1
LWG026	P200112	12.97	13.07	60.6
LWG027	P200090	0.65	0.75	47.0
LWG027	P200091	2.9	3	31.9
LWG027	P200092	5.9	6	42.6
LWG027	P200093	8.9	9	45.9
LWG027	P200094	11.9	12	46.5
LWG027	P200095	16.69	16.79	53.5
LWG028	P200120	0.57	0.67	43.2
LWG028	P200121	3.57	3.67	54.2
LWG028	P200122	6.58	6.68	40.8
LWG028	P200123	9.59	9.69	37.0
LWG028	P200124	12.56	12.66	55.5
LWG028	P200125	17.64	17.74	52.3
LWG029	P200102	0.51	0.61	44.2
LWG029	P200103	3.54	3.67	55.8
LWG029	P200104	6.59	6.69	49.8
LWG029	P200105	9.59	9.69	57.8
LWG029	P200106	12.55	12.65	44.1
LWG029	P200107	17.91	18.01	43.1
LWG030	P200096	0.65	0.75	50.2
LWG030	P200097	2.9	3	48.7
LWG030	P200098	6.06	6.16	46.9
LWG030	P200099	9.39	9.49	54.2
LWG030	P200100	11.9	12	57.1
LWG030	P200101	18.6	18.7	49.9
LWG031	P200126	1.34	1.44	34.8
LWG031	P200127	3.59	3.69	47.3
LWG031	P200128	6.38	6.48	35.3
LWG031	P200129	9.59	9.69	50.5
LWG031	P200130	12.47	12.57	54.7
LWG031	P200131	18.3	18.4	61.3
LWG032	P200132	0.44	0.54	52.5
LWG032	P200133	3.58	3.68	46.9
LWG032	P200134	6.18	6.28	48.7
LWG032	P200135	9.28	9.38	51.6
LWG032	P200136	12.22	12.32	52.8
LWG033	P200137	1.06	1.16	43.4
LWG033	P200138	3.33	3.43	46.8

HoleID	Sample ID	From	То	Brine Porosity (v/v)
LWG025	P200119	18.62	18.72	56.5
LWG034	P200147	0.6	0.7	57.0
LWG034	P200148	3.41	3.51	54.1
LWG034	P200149	6.44	6.54	50.2
LWG035	P200142	1.3	1.4	44.7
LWG035	P200143	3.41	3.51	35.9
LWG035	P200144	6.43	6.53	56.7
LWG035	P200145	9.59	9.69	46.6
LWG035	P200146	12.32	12.42	55.6
LWG050	P200001	0.43	0.53	42.5
LWG050	P200002	3.42	3.52	40.0
LWG050	P200003	5.785	5.885	56.7
LWG050	P200004	9.495	9.595	48.0
LWG050	P200005	12.49	12.59	49.4
LWG050	P200006	18.47	18.57	51.5
LWG050	P200007	20.61	20.71	39.2
LWG033	P200139	6.53	6.63	40.6
LWG033	P200140	8.83	8.93	39.5
LWG033	P200141	11.74	11.84	43.9

## **APPENDIX 5 - Summary of Resource Estimate and Reporting Criteria**

This ASX announcement has been prepared in compliance with JORC Code 2012 Edition and the ASX Listing Rules. The Company has included in Appendix 1, the Table 1 Checklist of Assessment and Reporting Criteria for the Lake Wells Project as prescribed by the JORC Code 2012 Edition and the ASX Listing Rules.

The following is a summary of the pertinent information used in the MRE with full details provided in JORC Table 1 included as Appendix 6.

#### Geology and Geological Interpretation

Lake Wells is located the North-eastern margin of the Yilgarn Craton. The playa lake morphology comprises recent Cainozoic lacustrine sediments which overlie undifferentiated clay, potentially the upper surface of Tertiary paleochannel fill. The Quaternary lacustrine sediments which host the resource defined in this report are labelled Lake Playa Sediments (LPS) for this purpose.

The shallow geological profile beneath the lake is relatively homogenous. The top approximately 5 m comprises slightly coarser grained material due to the variable abundance of evaporite minerals including gypsum sands. Beneath this layer the profile comprises interbedded clay, silt and sand.

In the northern arm of the lake, two holes, LWG007 and LWG024, appear to have encountered shallow basement, interpreted as Proterozoic meta-sediments, at 6.8m and 6.75m below lake surface, respectively. Drilling terminated on this material.

Islands are present on the lake surface. Holes LWG021, LWG031 and LWG035 were drilled on islands within the lake playa to test geological continuity beneath the islands, and to assess the impact of islands on brine chemistry. The data demonstrates that the islands are a surficial feature, and the shallow stratigraphic sequence is continuous beneath the islands. Shallow (0-10m depth) brine beneath the islands exhibits lower concentration compared to the Lake. The data available from three islands indicate that brine concentration increases linearly with depth up to 10m. At that depth the concentration is comparable to the surrounding lake indicating that the dilution effect of islands in limited to 10m depth.

This is a phenomenon recorded from salt lakes in the Yilgarn Block and elsewhere in Australia.

#### Drilling and Sampling Techniques

The MRE is based upon data obtained from Company's shallow core auger drill program. The drill program utilised a lightweight auger rig capable of drilling core to the targeted depth. The drill rig was towed by a tracked Landtamer amphibious vehicle with Argo vehicles providing support. The drilling method recovered intact sediment core in 750mm lengths of clear tubing.

All drilling and sampling used for the resource estimate was completed using hollow auger coring. This method allows a number of samples to be taken – split tube, intact tube (both 0.75m long) and bulk water (brine) samples.

The intact core is recovered using clear Lexan tubes which are sealed shortly after drilling.

Bulk water (brine) samples were taken by pumping from inside the hollow augers using a sample pump. Holes were purged for approximately three hole volumes before samples were taken. Brine samples were taken:

- At the base of the Lake-Bed Sediments
- At the end of the drillhole

Entrained brine in samples were recovered by centrifuging selected intervals of intact drill core in the laboratory. Entrained brine samples were extracted from 0.1m intervals. Intervals were selected in the field. The Intervals were subsequently cut from the core in the laboratory and processed immediately.

Porosity samples are marked up at 0.1m intervals in the field at pre-determined depths (approximately 3m down each hole). Porosity samples were cut from the core in the laboratory and processed immediately.

Core handing was designed to minimise loss by evaporation. Core was contained in plastic tubing during drilling, and sealed immediately upon recovery. The core was un-sealed only in the laboratory immediately prior to processing.

#### Sample Analysis Method

Porosity was determined gravimetrically by weighing the wet sample, drying at 80 degrees and weighing the dry sample.

Brine samples were analysed using ICP-AES for K, Na, Mg, Ca, with chloride determined by Mohr titration and alkalinity determined volumetrically. Sulphate was calculated from the ICP-AES sulphur analysis Primary samples were sent to Bureau Veritas Minerals Laboratory, Perth. Secondary samples were send to ALS Ammtec Laboratory in Perth, and Intertek Genalysis Laboratory in Perth.

Reference standard solutions were sent to Bureau Veritas Minerals Laboratory, and Intertek Genalysis Laboratory to check accuracy.

#### **Classification Criteria**

The MRE has been classified and is reported as Measured, Indicated and Inferred in accordance with the requirements of the 2012 JORC Code. Classification of the Mineral Resource estimates was carried out taking into account the robustness of the geological understanding of the deposit, the quality of the sampling and density data, and drill hole spacing.

#### Resource Estimation Methodology

The resource is calculated as the tonnage of minerals dissolved in the liquid brine contained in pores within the host rock. Tonnages are calculated as dissolved minerals in brine on a dry weight by volume basis e.g. kilograms potassium per cubic meter of brine.

The Potassium (K) tonnage of the resource is calculated as Rock volume multiplied by volumetric porosity equalling Brine volume. Tonnage is the product of Brine volume multiplied by Concentration.

#### Area

The lateral extent of the resource is defined by the salt lake boundary as defined in Geoscience Australia's 1:250K topographic data set supplied by WHE. The resource is further constrained by the tenement boundaries which do not encompass the entire lake surface. The total area of the resource is 477 km<sup>2</sup>.

#### Porosity

Total porosity (Pt) relates to the volume of brine filled pores contained within a unit volume of aquifer material. A fraction of this pore volume can by drained under gravity, this is described as the specific yield (or drainable porosity). The remaining fraction of the brine which is held by surface tension and cannot be drained under gravity is described as the specific retention (or un-drainable porosity). The form of porosity used in brine resource estimation varies with different proponents. WHE elected to use total porosity to assess the Lake Wells resource.

The mean and median total porosity of 146 samples was 46.4% v/v. The data is normally distributed and no consistent spatial trends are observed laterally or with depth (Refer Appendix 3). A value of 46.4% was applied in calculation of the brine volume of the resource. The value is consistent with typical values for mixed fine grained sediment (Fetter, 1996 pp86) and lacustrine clay, silt and fine alluvial sand, (Spitz and Moreno 1996, pp346).

The solute (K, Mg, SO<sub>4</sub>) concentration dataset comprised a mixture of samples downhole with overlapping and varying sample intervals:

- Entrained brine samples from consistent 10cm intervals taken from varying depths
- Pumped brine samples from varying intervals and varying depths.

With the exception of brine beneath islands, the brine concentration is relatively consistent with depth. The maximum downhole variance from the mean was 15%, whilst the average variance was 0.4%. Average solute concentration for the full thickness of the brine aquifer penetrated at each drillhole was calculated as a length-weighted average using all samples. Entrained brine samples were assigned the length from the mid-point between adjacent samples (or the water table, or the end of hole). Pumped brine samples were assigned the length of open hole during the sampling event. The resulting dataset was used for interpolation of brine concentration across the lake.

#### Modelling / Interpolation

Solute concentration was interpolated across the lake area using inverse distance weighting algorithm with power of 2, search radius of 3,800 m, 3 grid passes, a single search sector and a requirement for minimum of 1 sample point per sector. The interpolated grid had a cell size of 500 x 500 m.

#### Cut-off Grades

No cut-off parameters were applied. Potassium concentration data are summarised in Appendix 1 and Appendix 2. The data exhibit low variability which indicates that the ore body is relatively homogenous, and the data exhibits normal distribution. No outliers were identified.

#### Mining and Metallurgical methods and parameters

No mining factors have been applied. The mining method is assumed to be recovery by draining brine using bores and or trenches. Current hydrologic studies are underway to assess the best methods for brine extraction. Fractional crystallisation of brine through solar evaporation produces a solid precipitate that lines the evaporation pond bottom and is harvested by analogous producing operations with mechanised equipment such as scrappers and trucked to processing facilities.

Mining of the resource will be undertaken by gravity drainage of the brine by pumping from trenches or wells.

No metallurgical factors or assumptions have been applied.

## **APPENDIX 6 - JORC TABLE 1**

# Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	All drilling and sampling is completed using hollow-core auger. Split tube drill core was taken for two auger holes twinned within 5 metres of an existing intact tube auger hole. Intact core is taken for all other intervals of all other holes. The intact core is completed using clear Lexan tubes which are sealed shortly after drilling. Bulk water (brine) samples from auger drilling were taken at the end of drilling each hole by purging the hole with a submersible pump, then taking the sample after purging. These brine samples are composite samples from the water table intersection to the end of hole. Split tube drill core was taken for two auger holes twinned within 5 metres of an existing intact tube auger hole. Entrained brine samples were recovered by centrifuging selected intervals of intact drill core. Entrained brine samples are marked up in 0.1m intervals in the field within pre-determined geological horizons. Porosity samples are marked up at 0.1m intervals in the field at pre-determined depths (approximately 3m down each
Drilling techniques	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	hole). Auger drilling was undertaken with an auger rig. Auger bit size was 178 mm, using 50 mm hollow core auger and 1.5 metre long rods. Core and/or chips were not oriented. Core diameter was 50 mm
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples. Whether a relationship exists between sample recovery and grade	Sediment samples were collected by hand from the collar of the hole as produced by the auger flights from the outside return. Brine was sampled from the auger holes at the completion of drilling once the hole had refilled with brine. Porosity and Entrained brine samples, 0.1 metres in length,
	and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	were taken at intervals within the intact drill core where best representation of lithology was present and minimally affected by auger drilling processes. Core loss is directly measured by taking the difference between the interval drilled and the core recovered and adjusting for compaction. No sampling bias is expected through core loss.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.The total length and percentage of the relevant intersections logged.	All auger drill holes were geologically logged by a qualified geologist, noting in particular moisture content of sediments, lithology, colour, induration, grainsize, matrix and structural observations. A digital drill log was developed specifically for this project.
Sub-sampling	If core, whether cut or sawn and whether quarter, half or all core	Brine was sampled directly from the auger hole with
techniques and sample preparation	taken. If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique.	duplicates taken periodically. Sample bottles are rinsed with brine which is discarded prior to sampling. Occasional auger holes were drilled within 3m of the intact core holes and used to provide lubrication brine to advance drilling. The holes named auxiliary auger holes were drilled to the top of the upper clay and brine sampling was undertaken.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.	Where water was injected into auger holes during drilling the holes were flushed completely three times before brine samples were taken. Where this couldn't be achieved immediately after drilling the holes were re-sampled at a later date, using the same technique. Geological logs are recorded in the field based on inspection
	Whether sample sizes are appropriate to the grain size of the material being sampled.	of cuttings, and a small amount of visible intact core tube material. Geological samples are retained for each hole in archive. All brine samples taken in the field are split into three sub-
		An onne samples taken in the new are split into three Sub-

Criteria	JORC Code explanation	Commentary
		samples: primary, potential duplicate, and archive.
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	Porosity was determined gravimetrically by weighing the wet sample, drying at 80 degrees and weighing the dry sample.
	For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. Nature of quality control procedures adopted (eg standards, blanks,	Brine samples were analysed using ICP-AES for K, Na, Mg, Ca, with chloride determined by Mohr titration and alkalinity determined volumetrically. Sulphate was calculated from the ICP-AES sulphur analysis Primary samples were sent to Bureau Veritas Minerals Laboratory, Perth. Secondary samples were send to ALS Ammtec Laboratory in Perth, and Intertek Genalysis Laboratory in Perth.
	duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	Reference standard solutions were sent to Bureau Veritas Minerals Laboratory, and Intertek Genalysis Laboratory to check accuracy.
Verification of sampling and	The verification of significant intersections by either independent or alternative company personnel.	Data entry is done in the field to minimise transposition errors.
assaying	The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Brine assay results are received from the laboratory in digital format to prevent transposition errors and these data sets are subject to the quality control described above.
	Discuss any adjustment to assay data.	Two holes were twinned for comparison of logging between split core and intact core.
		Independent verification of significant intercepts was not considered warranted given the relatively consistent nature of the brine resource.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Hole co-ordinates were captured using hand held GPS. Coordinates were provided in GDA 94_MGA Zone 51. Topographic control is obtained using Geoscience
	Specification of the grid system used.	Australia's 3-second digital elevation product.
	Quality and adequacy of topographic control.	Topographic control is not considered critical as the salt lakes are generally flat lying and the water table is taken to be the top surface of the brine resource.
Data spacing and	Data spacing for reporting of Exploration Results.	Drill hole spacing is approximately 3.7km across the lake.
distribution	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	The drilling is not on an exact grid due to the irregular natur of the salt lake shape and difficulty obtaining access t some part of the salt lake. Data points are presented i Appendix 1.
	Whether sample compositing has been applied.	A total of 2 twinned split core, and 28 intact core auger holes were drilled.
Orientation of data in relation to	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering	All drill holes were vertical as geological structure is flat lying.
geological structure	the deposit type. If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	No mineralised structures are expected in the unconsolidated sediment.
Sample security	The measures taken to ensure sample security.	All entrained brine and porosity samples were marked and kept onsite before transport to the laboratory. The entire core was sent to the laboratory where the marked intervals are cut and analysed.
		Bulk water (brine) samples were held on site before transport to the laboratory. Some samples were sent via the main office in Perth for sorting, before being sent on to respective laboratories. All remaining sample and duplicates are stored in the Perth office in climate-controlled conditions.
		Chain of Custody system is maintained.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Data review is summarised in Quality of assay data and laboratory tests and Verification of sampling and assaying. No audits were undertaken.

# Section 2: Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	Tenements drilled were granted exploration licences 38/2710, 38/2821, 38/2824, 38/3055, 38/3056 and 38/3057 in Western Australia. Exploration Licenses are held by Piper Preston Pty Ltd (fully owned subsidiary of ASLP).
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	No other known exploration has occurred on the Exploration Licenses.
Geology	Deposit type, geological setting and style of mineralisation.	Salt Lake Brine Deposit
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: • easting and northing of the drill hole collar • elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar • dip and azimuth of the hole • down hole length and interception depth • hole length. If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Exploration and resource definition drilling comprised of 32 hollow tube auger drillholes drilled to a depth of between 1.5 and 22.95 metres. Drillhole details and locations of all data points are presented in Appendix 1. Drilling, sampling and logging techniques are summarised in Section 1.
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated. Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. The assumptions used for any reporting of metal equivalent values should be clearly stated.	Within the salt lake extent no low grade cut-off or high grade capping has been implemented due to the consistent nature of the brine assay data. Downhole data aggregation comprised calculation of a length-weighted average for each drillhole using all samples. The downhole brine concentration was quite consistent. The maximum downhole sample variation from the length-weighted average potassium concentration was 15% and the average was 0.4%.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	The brine resource is inferred to be consistent and continuous through the full thickness of the Lake Playa sediments unit. The unit is flat lying and drillholes are vertical hence the intersected downhole depth is equivalent to the inferred thickness of mineralisation.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Addressed in the announcement.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	All results have been included.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	All material exploration data reported.
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).	Air Core drilling to be undertaken to further assess the occurrence of brine at depth and the nature of the basement.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling	Hydraulic testing be undertaken, for instance pumping tests from bores and/or trenches to determine, aquifer properties, expected

Criteria	JORC Code explanation	Commentary
	areas, provided this information is not commercially sensitive.	production rates and infrastructure design (trench and bore size and spacing).
		Lake recharge dynamics be studied to determine the lake water balance and subsequent production water balance. For instance simultaneous data recording of rainfall and subsurface brine level fluctuations to understand the relationship between rainfall and lake recharge, and hence the brine recharge dynamics of the Lake.

# Section 3: Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Cross-check of laboratory assay reports and database
	Data validation procedures used.	Extensive QA/QC as described in Section 2 Quality of assay dat and laboratory tests
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	A site visit was undertaken by the Component Person from 14 to 17 August 2015. The outcome of the visits was refinement of litelogy large account of the visits was refinement of
	If no site visits have been undertaken indicate why this is the case.	lithology logging, core storage, porosity determination, brin sampling procedures.
Geological Confidence in (or conversely, the interpretation of the mineral deposit.	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	The shallow geological profile beneath the lake is relative homogenous. The porosity of the material is consistent will depth; hence the geological interpretation has little impact on the
	Nature of the data used and of any assumptions made.	resource except to define its thickness.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	Islands on the lake surface have the impact of diluting the shallo brine beneath the islands. These areas have been removed from the resource estimate
	The use of geology in guiding and controlling Mineral Resource estimation.	the resource estimate
	The factors affecting continuity both of grade and geology.	
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	The resource extends beneath 399.75 km <sup>2</sup> of salt lake surface. The top of the resource is defined by the water table surface; of average 0.5m below ground surface. The average thickness of the resource is 15.9m and ranges from 6.1 m to 22m.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Brine concentration was interpolated using inverse distance weighted calculation (power of 2, search of 3800m single searce sector, 3 grid passes). MapInfo and Discover software was used Drillholes located on islands were not used for interpolation. The block size was 500 x 500m. Each block extended the for
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	thickness of the resource. Solute contained in each block was calculated as the product of block area, thickness, porosity ar interpolated solute concentration.
	The assumptions made regarding recovery of by-products. Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	Average drillhole spacing was 3,700m. Downhole sample spacing varied between drillholes ar averaged 4.8m.
		No check estimates were available
	In the case of block model interpolation, the block size in relation to	No recovery of by-products was considered
	the average sample spacing and the search employed.	Deleterious elements were not considered Selective mining units were not modelled.
	Any assumptions behind modelling of selective mining units.	Correlation between variables was not assumed.
	Any assumptions about correlation between variables.	The geological interpretation was used to define the thickness
	Description of how the geological interpretation was used to control the resource estimates.	the orebody. Grade cutting or capping was not employed due to th homogenous nature of the orebody.
	Discussion of basis for using or not using grade cutting or capping.	Shallow brine beneath islands is diluted. A model of linear dilution
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	from surface to maximum depth was applied the solu concentration interpolation beneath all islands.
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Not applicable to brine resources. See discussion of moistur content under Bulk Density
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	No cut-off parameters were used

Criteria	JORC Code explanation	Commentary
Mining factors or assumptions	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	Mining will be undertaken by gravity drainage of brine from bores or trenches.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	The brine is characterised by elevated concentration of potassium, magnesium and sulphate elements and distinctly deficient in calcium ions. Such a chemical makeup is considered highly favorable for efficient recovery of Schoenite from the lake brines (the main feedstock for Sulphate of Potash production), using conventional evaporation methods
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	Environmental impacts are expected to be; localized reduction in saline groundwater level, surface disturbance associated with trench, bore, and pond construction and accumulation of salt tails. The project is in a remote area and these impacts are not expected to prevent project development.
Bulk density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vughs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit. Discuss assumptions for bulk density estimates used in the	Bulk density is not relevant to brine resource estimation. Volumetric moisture content or volumetric porosity was measured based on determination of 146 samples (average downhole sample spacing 3.5m) to yield an average value of 46.4% v/v.
Classification	evaluation process of the different materials. The basis for the classification of the Mineral Resources into varying	The data is considered sufficient to assign a measured resource
	confidence categories. Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). Whether the result appropriately reflects the Competent Person's view of the deposit	classification to brine beneath the lake surface which exhibits low lateral and vertical variability. Brine beneath islands exhibits vertical variability and is sampled by a limited number of drillholes. The resource beneath islands is assigned an inferred resource classification. The result reflects the view of the Competent Person
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	No audit or reviews were undertaken.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	The estimated tonnage represents the in-situ brine with no recovery factor applied. It will not be possible to extract all of the contained brine by pumping of bores or trenches. The amount which can be extracted depends on many factors including the permeability of the sediments, the drainable porosity, and the recharge dynamics of the aquifers. No production data are available for comparison
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	