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**KEY PROJECT** 

Lake Disappointment Project

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# LAKE DISAPPOINTMENT (LD) PROJECT CONFIRMED AS A GLOBALLY SIGNIFICANT TIER 1 SULPHATE OF POTASH DEPOSIT

LD Drainable Resource of 153Mt of SOP @ 11.35 Kg SOP/m<sup>3</sup> of brine

## Highlights

- Revised in situ and Drainable SOP Resources estimated by independent hydrogeological specialists, Strategic Water Management.
- LD in situ Mineral Resource increased to 596 million tonnes (Mt) of SOP.
- LD Drainable (Extractable) Resource estimated at 153Mt SOP in brine with average grade of 11.35kg SOP/m<sup>3</sup> of brine.
- Excellent brine flows from shallow (1.5-2m deep) surface trenches on LD with an SOP grade of 13.4kg SOP/m<sup>3</sup> of brine.
- Four 200mm cased bores (80-100m) completed on LD. Expanded flow pump trials to commence shortly.
- Reserve drilling has commenced. Reserve estimate planned for fourth quarter.

Reward Minerals Limited ("**Reward**" or "**the Company**") is pleased to announce a significant milestone in the Company's path to developing the 100% owned LD Sulphate of Potash ("**SOP**") Project located in Western Australia.

Following recent laboratory testing of core samples from the 2015 – 2016 drilling programs the LD SOP Project is now estimated to contain the following SOP Resources:

- an in situ Mineral Resource of 596 Mt of SOP contained in the sediments of LD; and
- a Drainable Resource estimated at 153 Mt.

#### Managing Director's Comment:

"We're extremely pleased with the results of the independent Mineral Resource update. The numbers speak for themselves. Lake Disappointment stands out as a Tier 1 SOP deposit and the leading project of its kind in Australia." Strategic Water Management, has reviewed the previous resource data and the specific yield - effective porosity results reported by Global Groundwater ("GGW") and Core Labs Pty Ltd to establish the Resource estimates. Strategic Water Management and GGW continue to be involved in hydrogeological works and modelling being undertaken at the Project for the purposes of groundwater licencing and environmental approvals required for project development.

The drainable Mineral Resource estimate is for both the lakebed sediments and the weathered basement. Core drilling in 2015 and the 2016 test production bore drilling have confirmed the presence of highly prospective unconsolidated sand zones within the weathered bedrock sequence, which has resulted in an updated conceptual hydrogeological model to be developed (Figure 2).

		Nomina	l Dimensi	ons (m)		Assigned Specific			
Hydrostratigraphic Unit	Unit Symbol	Тор	Base	Thick.	Volume (m³ x 10 <sup>6</sup> )	Yield Effective Porosity (%)	SOP Brine Grade (kg/m³) <sup>(1)</sup>	Drainable SOP (Mt)	JORC Resource Status
Upper lake bed sequence	Qhs & Qhl	0.5	2.0	1.5	1123.5	15	13.4	2.26	Indicated
Lower lake bed sequence	Qpl	2.0	6.0	4.0	2996	13	13.4	5.22	Indicated
Upper lake bed sequence (Exclusion zone)	Qhs & Qhl	0.5	2.0	1.5	738	15	13.4	1.48	Indicated
Lower lake bed sequence (Exclusion zone)	Qpl	2.0	6.0	4.0	1968	13	13.4	3.43	Indicated
Weathered basement	PUw	6.0	80.0	74.0	91834	12	11.2	123.4	Inferred
Weathered basement (sandy sections)	PUw	80.0	90.0	10.0	6987	22	11.2	17.2	Inferred
Total Estimates			105647			153			

Table 1: LD Project Drainable SOP Mineral Resource Estimate

(1) Note the total area of the lake previously reported is 1,241km<sup>2</sup> and the area of the exclusion zone previously reported is 492km<sup>2</sup> Figures have been rounded to 2 significant numbers

#### Table 2 Competitor Analysis

Company	Project	Proposed Abstraction Method	SOP Brine Grade (kg/m³)	In situ Resource (Mt)	Drainable Resource (Mt)
Poward Minorala Ltd	Laka Dicannaintment	Trenches	13.4	54.9	12.4
		Bore Pumping	11.2	541.1	142
Australian Potash Ca	Lake Wells High Grade	Bore Pumping	13.0	70	18.4
Australian Polash Co.	Lake Wells	Bores	8.9	40	10.5
Agrimin	Lake McKay	Trenches	8.3	164	9.7
Salt Lake Potash	Lake Wells	Unknown	8.7	85	Not estimated

Figure 1: LD Core holes, Push tube and Test Production bore locations



## Conceptual Hydrogeology

In order to assess the characteristics of the lakebed hydrogeology the sediments have been divided into the following Hydrostratigraphic units:

- Upper lake bed unit Groundwater in Qh. The unit is frequently highly permeable with permeability dominated by secondary interconnected porosity of thin gypsum beds. Average thickness 1.5m.
- Aeolian sand unit Groundwater in Qpe. An aquifer, when saturated, groundwater is held within primary porosity. Occurs as isolated sections within the upper lake bed sequence and surrounding the lake. Average thickness 1 – 1.5m
- Lower lake bed unit Groundwater in the Q/Tpl. Mostly low permeability clay with rare thin disconnected zones of gypsum with development of secondary porosity. Average thickness 4m.
- Weathered basement rock unit Groundwater in the PUw. Mostly clays and silts (average thickness 74m) with some permeable sand sections where structure aligns sandstone units, within the weathering profile (average thickness 10m).
- Basement rock unit Groundwater in the PUsx. Generally low permeability and regarded as the aquifer base.

### Groundwater Flow and Recharge v. Brine Abstraction

The application of first principles to determine groundwater inflow into LD indicates that recharge will be at most 2GL/yr, but most likely below 1Gl/yr. This first principal conceptualisation indicates that recharge into the lake is dominated by direct rainfall which in an average year is approximately 240GL and a component of surface water runoff (10 – 13GL/year). This recharge is then offset by the evaporation which concentrates the salts.

The relationship between recharge and evaporation is one that exists in a form of equilibrium as evidenced by the consistent water levels below the surface. Groundwater inflows to the lake represent a small portion of the overall hydrogeological cycle.

The intended abstraction of 2000L/s (63GL/year) is far less than the average annual recharge potential (240GL/year), therefore it is unlikely that abstraction will impact lake brine levels beyond the immediate cone of depression for each trench or extraction bore. Grade will be continuously maintained by the addition of brines pumped from the deep wells into the trenches

The Company is now in the process of expanding the knowledge base around the deeper aquifer by reviewing the regional structural geology and 2015-2016 core results to target potential high yield zones. Once these new bores have been tested the Company will provide an update on the resource model. Four boreholes with 200mm slotted casing have been installed on LD and are ready for pumping trials (see RWD December 2016 Quarterly Report).

Overall, this drainable Mineral Resource confirms the significance of the LD basin as one of the largest undeveloped brine SOP deposits globally. A comparison of the LD Resource with other potential brine/SOP projects in Australia is shown in Table 2.

## LD SOP Project Background

The LD SOP Project is located within the Little Sandy Desert, northwest Western Australia and comprises of 5,305km<sup>2</sup> of granted Exploration Licences. Resource drilling has been underway at the Project since March 2015 with the aim of expanding the Company's previously stated Indicated Mineral Resource estimate contained in the upper 4 metres of the lake.

To the date of this release 20 direct push bores, 14 test trenches, 10 vertical core holes and 4 test production bores have been completed on the lake. The core holes were logged and sampled for brine chemical analyses and gravimetric moisture (porosity) testing in 2015 (and previously reported). In 2016 some additional samples were taken from selected intervals of core for effective porosity – specific yield testing by Core Laboratories, Perth WA. This information together with the improved geological understanding and the definition of aquifer parameters from test pumping reported by Global Groundwater provides the basis for Strategic Water Management's revised insitu resource and drainable resource estimate.

Reward's activities have concentrated on exploration and development of SOP Resources in the region since early 2013. Works completed to date indicate very favourable brine grade/chemistry and evaporation parameters (high evaporation, low rainfall and low humidity, etc). The availability of substantial areas of flat lake surface and favourable geotechnics for constructing evaporation ponds are also important benefits of the Project site.

Reward established a maiden Mineral Resource at LD in 2007 based on shallow drilling (4 vertical metre average) noting high Potassium values and favourable chemistry for the production of SOP. The findings from this recent program correspond well with the 2007 data for the near surface horizons.

## **Resource Estimation**

The in situ and drainable Mineral Resource estimate is based on results from drilling, trenching and sampling.

The exploration programme has involved the following;

- Drilling and sampling 20 direct push tube holes in the lakebed sequence for geological control and aquifer parameters,
- The construction and test pumping of 14 trenches
- The drilling of 10 core holes for geological control, brine analysis and aquifer parameters.
- The drilling of 4 test bores for aquifer performance and parameters to be tested during 2017.

The determination of the volume of sediment is based on a total lake area of 1,241km<sup>2</sup> (as previously reported ASX release 23 November 2015), 749km<sup>2</sup> of which is accessible and 492km<sup>2</sup> is covered by an exclusion zone.and a thickness of each hydrostratigraphic unit based on an average thickness from all core holes.

The average total porosity and brine grades for each hydrostratigraphic unit was calculated by Reward Minerals internal analysis. The specific yield – effective porosity was calculated using a standard laboratory methodology by Core Laboratories, Perth WA.

The lakebed sequence down to an average depth of 6m for which more drilling, test and sampling information is available has been classified as an indicated resource. For the weathered bedrock sequence where core logs and brine grades are available the resource has been classified as inferred.

The density of coverage of the lake by core holes, push tube holes and trenches is relatively low, however the lakebed sediments show a high degree of lateral continuity for both brine grade and geology reflecting the slow process of deposition and brine concentration within the lake. It is anticipated that extraction of brines from the lakebed sequence will be from long continuous trenches on average up to 3m deep. The high surface area exposed by the trenches facilitates the inflow of groundwater.

For the weathered bedrock sequence the cored holes have identified prospective zones of unconsolidated sand, however the extent of these sand layers and the impact of regional geological structure requires additional investigation. A significant thickness of the weathered basement is made up of low permeability siltstones, clays and sandy clays, however the presence of remnant jointing and other structure indicates that brine movement occurs both vertically and horizontally.

With respect to brine grade a cut off grade is not applicable as brine migrates within the lake and bedrock sediments with time.



Figure 2: LD Cross-section Cut-out

#### Upcoming Resource Definition Activities

## Ongoing definition of the deep resource

Further detailed interpretation of the regional structural data and 2015 core will be undertaken to identify a number of targets for future test production bores in order to improve the deep resource definition.

## Trench layout design and density

Trench testing has shown that the lakebed sequence is variable in its aquifer parameters across the lake, testing has shown that there are areas of high flow as well as low flow, being in a position to predict where to place trenches and in what density in order to obtain the highest possible abstraction per metre of trench will be an important design and operational cost input.

Work is underway to Integrate the shallow push tube analysis results from 2007 with the 2016 trench testing data in order to develop a higher level of understanding of where the high and low flow areas of the lake are.

Yours faithfully,

Michael Ruane Director on behalf of the Board

#### **Competent Persons Statement**

This information in this report that relates to Resource Estimation and hydrogeology is based on information compiled by Mr Robert Kinnell, a hydrogeologist and Competent Person who is a Member of The Australian Institute of Mining and Metallurgy and a Fellow of the Geological Society of London. Mr Kinnell is employed by Strategic Water Management and is a consultant to Reward Minerals and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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 Kinnell consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Brine and Sediment Assays and Analyses is based on information compiled by Dr Geoff Browne, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy. Dr Browne is a consultant to Reward Minerals Ltd. Dr Browne has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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'. Dr Browne 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: JORC Table**

## Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	Nature and quality of sampling (e.g. 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.	The core holes were drilled by an experienced in-house team using a heliportable coring rig recently acquired by the Company. Holes are nominally $\phi$ 96mm (HQ) with core recovered being $\phi$ 60-63mm. Core recovery varied significantly but was generally over 80%. Poor core recovery occurred in coarse grained/sandy horizons and in cavernous zones where mud circulation was lost.
		The core was logged for stratigraphic and geological interpretation by a professional contract geologist. On site sampling was limited to SG measurement of brine solutions recovered during drilling. Cores were bagged and delivered to Perth on completion for all subsequent analytical procedures.
		Test trenches were dug to depths of 2.5m and up to 100m long. Test pumping of the trenches varied from hours to 19 days, drawdown data were collected as per industry standard for test pumping. Brine levels were monitored in each trench as well as in up to 9 monitoring bores set at various distances from each trench to ascertain the extent of the cone of depression.
		Direct push tube boreholes were installed to depths between 1.87m to 10m to investigate the lakebed sequence continuous samples were collected at nominal metre intervals.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Cores from all drilling activities were photographed and then wrapped in a plastic film sleeve prior to packing into core trays of appropriate size for transport.
		The aim of the plastic wrapping was to minimize the water loss from the core material during transit to Perth.
Aspects of the determination of mineralisation that are Material to the Public Report.	Aspects of the determination of mineralisation that are Material to the Public Report	Brine Grade and Porosity
	The brine sampling set out to establish the quantity of soluble salts entrained in the core at different levels (depths). Owing to difficulties involved in cutting very wet core longitudinally (conventional procedure) cross sectional samples were selected at regular (1.5m-2.0m) intervals downhole for analysis. Samples were generally 500-800 grams wet weight and 100-150mm in length.	
		Initially the core SG was determined by the conventional wax- cover/water immersion procedure. Wet core sections were then cut longitudinally and disaggregated. A sample of the wet material (50-100g) was washed with a known mass (ca.500g) of water at 80°C. The water leach test work was conducted by an experienced metallurgist consultant Dr Geoff Browne with analysis of the leach brines by ALS Ammtec Laboratories.
		Combination of the analysis of the leach solutions and the wet core SG provides a reasonable estimate of the mass of soluble Potassium (K) and other ions per unit weight (tonnes) of core. From this figure and the SG of the wet core sample the value for the mass of soluble K, Mg, Na, Cl and SO <sub>4</sub> per m <sup>3</sup> of lake sediment can be calculated and used as the basis for estimation of the total porosity and in-situ SOP Resource.
		An approximate composition of the brine entrained in the core samples can be obtained from the mass of the soluble ions extracted (g/kg of core) divided by the total mass loss which occurs during the washing procedure – i.e. kg of K or SOP per

Criteria	JORC Code explanation	Commentary
		tonne of brine. Reward has developed an extensive library of assay results based upon analysing brine every 1.5m depth (approximately) within each of the core holes.
		The washing procedure used overestimates Calcium (Ca) and Sulfate values in the entrained brine. This results from dissolution of much more gypsum from the core than would occur in the high density brine entrained naturally in the cores sampled to date.
		The Total Dissolved Ion concentrations for the (core) entrained brines have generally exceeded 180g/litre hence the CaSO <sub>4</sub> solubility in these brines (in-situ) should not exceed 3g/l. To address this, the Ca and SO <sub>4</sub> figures quoted for the brine analyses have been corrected using the Baseggio data comparison.
		In general terms, Resource estimations should be made on the basis of kg SOP, SOM, etc. per m <sup>3</sup> of lakebed sediment. For completeness, Resource estimates were also made on the basis of porosity and volume/analysis (kg SOP and SOM per m <sup>3</sup> ) of brine entrained in lakebed sediments.
		An alternative approach is to estimate the Resource on the basis of sediment porosity and composition of the brine entrained in the sediment. This approach was used to provide the Resource estimate reported herein. Porosities were estimated on the basis of determinations of mass loss which occurs on drying of the core samples to constant weight at 110°C coupled with laboratory analyses of porosity and density.
		Importantly the Resource calculated by either methodology resulted in very similar estimates from the samples recovered via the drilling undertaken.
		The Company has quoted K as SOP and SOM on the basis that the brines extracted contain more than sufficient sulfate for these salts to crystallise as sulfates, more specifically Schoenite, upon evaporation of the brines.
		Drainable Porosity
		Sixteen samples were selected by Reward from the 2015 diamond core holes based on sample quality, spatial location over the lake and sample depth. The bore locations are shown on Figure 1 and the strata sample depths are given in Table 1. The samples were then prepared and submitted to Core Laboratories WA (Core Labs) by Reward in June 2016 for laboratory testing of permeability and specific yield with 15 of the 16 samples successfully tested.
		The methodology of the testing used by Core Labs to derive the parameters is as follows; The samples were placed in a controlled humidity oven at 60°C until a constant weight was obtained indicating the sample was dry. After drying the weight of all samples were measured before they were processed through the Ultrapore™ porosimeter to determine grain volume. As a standard quality control measure, a calibration check plug was run before and after the samples. Pore volume was calculated from subtracting the grain volume from the fresh state bulk volume. The selected samples were saturated in formation brine supplied and then spun down in a centrifuge at 3700rpm until brine production had stopped. Weights of the sample were taken before and after centrifuging from which, using the calculated pore volume and the brine density an effective porosity was calculated

Criteria	JORC Code explanation	Commentary
	In cases where 'industry standard' work has been done this would be relatively simple (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.	See "drilling techniques" below.
Drilling techniques	Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. 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.).	Core Drilling was done with a heliportable diesel drive rig; depth capacity 150 metres (HQ – NQ Core). Direct push tube drilling was done using a Geoprobe 540MTcoupled with a dual tube Macro-Core closed piston sampling system.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	See logging below.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Core was taken to assess core percentage recovery during logging. All available core was analysed as indicated herein.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	Total core logged and photographed.
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.	See above.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	The core logging is qualitative in nature.
	The total length and percentage of the relevant intersections logged.	See logging above.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	Sections of core were selected based on their stratigraphy and condition and provided to Core Labs of Belmont WA for porosity and specific yield – effective porosity testing. The techniques used to prepare the core are standard laboratory techniques and the process undertaken to determine specific yield – effective porosity is detailed above.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	Core. See above.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Core sections were collected at 1.5-2.0m intervals and analysed separately.
		Solid samples recovered have been retained for future analysis.
		For specific yield sampling core samples were selected based on geology, stratigraphy and general condition by the CP.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	As above.
	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.	As above.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Core samples collected regarded as representative of a particular stratigraphic section but also see above notes.

Criteria	JORC Code explanation	Commentary
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.	The brine samples collected from leaching of the core sections were analysed at a NATA accredited independent laboratory (Australian Laboratory Services Ltd, ALS Metallurgical); using Australian, International and Internal standards and methods to calibrate equipment and for analytical procedures.
		Samples for porosity determinations were submitted to SGS, E-Precision Laboratory and Soil and Water Group using Australian Standards and in-house methods and procedures.
		Samples for specific yield- effective porosity determinations were submitted to Core Labs, Belmont WA.
		Blanks, duplicates and spiked samples have been submitted on a regular basis with exploration samples sent to laboratories.
	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.	No field analyses were undertaken. Samples were delivered to ALS, SGS and Core Labs after Company labelling/recording for security and assessment purposes. Chloride analysis conducted in house.
	Nature of quality control procedures adopted (e.g.	See above.
	standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	NATA accredited laboratories were used together with duplicate sampling. Laboratory certificates were assessed to ensure results confirm expectations and appropriate QA/QC.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	See sampling techniques section above.
	The use of twinned holes.	Individual holes only.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Data storage as PDF/Excel files on Company PCs in Perth.
	Discuss any adjustment to assay data.	See Material Aspects above.
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.	Collars of the holes were located by GPS (±5m). Reduced levels of hole collars were based on a recent topographical survey of LD by a licenced surveyor. The survey confirmed RL variances of less than 0.5m over 40km of the LD surface in a north-south direction and less than 1m over 30km in an east-west direction.
	Specification of the grid system used.	UTM grid – GDA 94 Z51
	Quality and adequacy of topographic control.	See above regarding RLs.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	See Figure 1 and Appendix 1.
	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.	Drill hole spacing was variable, ranging from 3km to 10km in distance across the lake and was not based on a grid due to soft ground conditions limiting access to drill targets/sites.
		The bore holes were also spread across the lake to ensure that there is a representative coverage.
		The geological logs from the 10 core holes used in the estimation of the in situ and drainable resources show a consistent geology and hydrostratigraphy, there are variations

Criteria	JORC Code explanation	Commentary
		in layer thickness and the presence of regional structure has some influence however the sediments are of a consistent makeup across the lake.
		Test production bores were located based on geological analysis of the core holes.
	Whether sample compositing has been applied.	No.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	See above.
	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 sample bias.
Sample security	The measures taken to ensure sample security.	All samples were clearly marked and secured onsite before being transported and submitted to independent laboratories (ALS and others) clearly labelled with Company identifiers only.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	The Company and independent Consultants undertake detailed and regular data quality assurance, reviews and cross checks to verify the accuracy of all data and results.

# 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.	Tenements drilled were E45/2801, E45/2802, E45/2803, E69/2156, E69/2157, E69/2158 and E69/2159 and are registered 100% in the name of Holocene Pty Ltd (Reward Minerals Ltd). Drilling and sampling was conducted in conjunction with Martu monitors within the Martu Determination Area.
	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.	Granted tenement subject to State Deed and Indigenous Land Use Agreement with the Martu Traditional Owners.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	No known previous exploration performed by other parties on the exploration area.
Geology	Deposit type, geological setting and style of	Regional Geology
	mineralisation.	The regional geology is set out by regional mapping of the Gunanya and Blanche-Cronin 1:100,000 geological series sheets (Bagas, 1998 and 1999, respectively) and the Gunanya 1:250,000 geological series sheet (Williams and Williams, 1980).
		Basement rocks surrounding and underlying Lake Disappointment belong to the Proterozoic Tarcunyah Group. The unit comprises an interbedded sequence of sandstone, siltstone and shale deposited around 800 Ma. The basal part of this sequence comprises massive medium to coarse grained, cross-bedded sandstone with local beds of quartz pebble conglomerate. The sandstone commonly contains clay and is interbedded with minor amounts of granular conglomerate containing intraformational mudstone clasts. The sequence fines upward through a 100 m interval to interbedded flaggy siltstone, shale and minor amounts of thin fine grained micaceous sandstone.
		The Tarcunyah Group basement rocks outcrop to the east, southwest and northwest of Lake Disappointment and elsewhere are obscured by Cenozoic superficial cover. The Tarcunyah Group in the southeast area of the Gunanya sheet (area of Lake Disappointment) is open-folded about west- north-westerly trending axes.
		The Cenozoic superficial cover consists of dissected and ferruginsed ferricrete and silcrete and older colluvium as well as calcrete, which comprises massive, nodular and cavernous sandy limestone and occurs adjacent to Lake Disappointment where it formed as palaeodrainage valley infill deposits. More recent Quaternary deposits of colluvium, aeolian sand in plains and dunes, silty clay soils, alluvium and lake deposits blanket and obscure the older rocks.
		Lake Disappointment Site Geology
		The site geology consists of Proterozoic basement rocks which grade from fresh at depth to extensively weathered, underlying other superficial deposits of Quaternary lacustrine and aeolian sediments, which form the lake bed sequence. The lake bed sequence was detailed by Global Groundwater (2007) based on interpretation of push tube samples pushed to a maximum of about 14 m depth (or refusal). These are summarised below with the unit symbols as assigned by Global Groundwater (2007) largely retained in order to more readily correlate between reports, although the symbol for the lower lakebed sequence (previously QpI) has been altered in this document to QpI/TpI to reflect the likely age of potential palaeochannel deposits at the base of the lakebed sequence. The more recent (2014, 2015 and 2016), deeper diamond

Criteria	JORC Code explanation	Commentary
		core drilling over the lake has provided better data on the depth and nature of the basement rocks, which herein are assigned the symbols PU (fresh) and PUw (weathered).
		Basement
		Basement (PU) is interpreted to have been intersected at a depth of 110 m in diamond core hole LDDH1507 where it consists of slightly weathered grey to black sandy and clayey, micaceous siltstone. It is laminated to thinly bedded at dips of between 25 and 30 degrees.
		Weathered Basement
		Weathered basement (PUw) intersected to 110 m depth in core hole LDDH1507 grades from moderately to highly weathered siltstone, sandstone, sand, clay and claystone at depth through to a shallower mottled zone consisting mostly of clay with minor gypsiferous sands and gravel below the overlying lake bed sequence at 9.7 m depth. Relict joints infilled with gypsum can be observed in places throughout the weathered basement sequence and relict dips of between 25 and 30 degrees are also apparent in the weathered strata.
		Sandy sections are noted at depth in a number of the logs of diamond core holes drilled on the lake (Figure 1) and in core hole LDDH1507 this consists of very weakly siliceous cemented to uncemented, very fine to fine-grained, and with some sections fine to medium grained, quartz sand with crystalline gypsum sand and minor heavy mineral sand. The sand is occasionally described as having an argillaceous matrix. Sections dominated by sand and sandstone are described over the intervals 65 to 70.7 m, 71 to 81.5 m and 90.5 to 91 m depth in hole LDDH1507.
		Sandy sections of weathered basement rocks were recorded on logs of 8 of the 15 diamond core holes drilled on or immediately adjacent to the lake and in RC drill holes north of the lake (R. Kinnell, pers. comm., December, 2016) suggesting significant extent. However, actual distribution of the sandy sequences throughout the subsurface is currently in the process of being better delineated. This may be associated with basement rock structure and further work is being planned to improve the current geological model through review and detailed appraisal of the available core and potentially additional diamond drilling. This will improve understanding of the relationship between structure and the occurrence of sandy sequences within the basement.
		Lake Bed Sequence
		Lacustrine deposits within Lake Disappointment have been divided into an upper and lower sequence detailed by Global Groundwater (2007). The lower lakebed sequence (QpI/TpI) consists of more consolidated alluvial/lacustrine sediments of firm to stiff, medium to high plasticity sandy clays and clays with minor lenses and thin horizons of clayey to silty sands. Gypsum in crystalline form and as localised cellular aggregates is also present along with heavy mineral sands in trace proportions. Based on push tube and diamond core samples, the thickness of the lower lake bed sequence varies in thickness across the lake from 8 to 30 m with these thickest sections being assumed to occur in association with inferred palaeochannels incised into the underlying weathered basement rock.
		A series of discontinuous aeolian deposits (Qpe) occur locally throughout the extent of Lake Disappointment overlying the lower lake bed sequence and both fringing and underlying the upper lakebed sequence. The unit comprises orange, brown,

Criteria	JORC Code explanation	Commentary
		fine to medium grained silty to clayey sands composed primarily of quartz with variable crystalline gypsum and trace proportions of heavy mineral sand. It is anticipated that the base of the unit occurs within 2 m of the lake surface.
		The upper lakebed sequence (Qhs and Qhl) is less consolidated than the lower lake bed sequence and consists of reworked, loose to very loose gypsiferous deposits (Qhs) of fine to coarse grained silty to clayey sands and sandy to clayey gravels. The gypsum is present predominantly in seed (gypsarenite) form, the often rounded nature of which is considered indicative of aeolian reworking and accumulation. Crystalline gypsum (selenite), quartz sand and heavy mineral sand are also present. Lacustrine deposits (QhI) of soft to firm, low to high plasticity clays to sandy clays, sandy silts and loose clayey sands with variable decomposed organic material content and minor gypsum in both crystalline and seed form as well as localised cellular form, quartz and heavy mineral sands are also present.
		The playa lake surface marks the top of the sequence and typically comprises a thin crust (usually less than 5cm in thickness) of evaporate mineral deposits (halite and gypsum). Overall, the upper lakebed sequence forms a near continuous horizon across the lake and where intersected in push tube samples attains a maximum thickness of 2.35m.
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:	Resource definition drilling comprised of 10 diamond core drill holes drilled to a depth of between 39m and 135m. All holes drilled were vertical (-90 dip) and 4 test production bores.(see detail in the Appended Technical report)
	easting and northing of the drill hole collar	See Appendix 1 above.
	<ul> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> </ul>	RLs not available for individual holes but the lake surface being drilled is extremely flat over large distances (RL±0.5m).
	<ul> <li>down hole length and interception depth</li> </ul>	See Appendix 1.
	<ul> <li>hole length.</li> <li>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.</li> </ul>	See Appendix 1.
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	No grade cut-off used due to the uniform nature of assay data received. Assay data is numerous with frequent and regular intervals therefore no weighting was utilised.
	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.	No aggregation of results.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	Only direct assay/analytical results reported. SOP value quoted was calculated as K x 2.23 (K to $K_2SO_4$ ).
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.	Stratigraphic drill holes for identification of the relationship between Aeolian, lakebed, weathered bedrock and fresh bedrock. The geological strata underlying Lake Disappointment are saturated generally to within a metre of the surface and form a heterogeneous, anisotropic aquifer in which groundwater is contained within both primary and secondary porosity. Using the geological units assigned to the strata below the lake the saturated strata below the lake surface can be broadly divided

Criteria	JORC Code explanation	Commentary
		into several hydrostratigraphic units which from the lake surface down are;
		Upper lake bed sequence – Groundwater in Qh. The unit is frequently permeable with permeability dominated by secondary interconnected porosity of thin gypsum beds.
		Aeolian sand unit – Groundwater in Qpe. An aquifer where saturated where groundwater is held within primary porosity. Occurs as isolated sections and is effectively within the upper lake bed sequence and is considered as such herein.
		<ul> <li>Lower lake bed sequence – Groundwater in Qpl/Tpl. Mostly low permeability clay with rare thin disconnected zones of gypsum with development of secondary porosity.</li> </ul>
		<ul> <li>Weathered basement (Tarcunyah Group) – Groundwater in PUw. Mostly clays and silts with some quite permeable sand sections at depth.</li> </ul>
		<ul> <li>Fresh basement (Tarcunyah Group) – Groundwater in PU. Low permeability rock mass, probably with higher permeability fractures in places, regarded as the aquifer base.</li> </ul>
		Actual groundwater flow directions are not established but it is assumed groundwater in the area surrounding the lake flows toward the lake, which acts as a groundwater discharge zone through evaporation, thereby concentrating salts within the groundwater.
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	The hydrostratigraphic units described above are present across the lake, the brine assays indicate that the entire sequence is saturated to a depth beyond the depth of the core holes.
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.	See Figures within 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.	Brine and core data obtained are regarded as indicative but significant. All analytical results available are provided in this release.
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 available data provided herein.
Further work	The nature and scale of planned further work (e.g.	Ongoing definition of the deep resource
	tests for lateral extensions or depth extensions or large-scale step-out drilling).	Further detailed interpretation of the regional structural data and 2015 core will be undertaken to identify a number of targets for future test production bores in order to improve the deep resource definition.
		Trench layout design and density
		Trench testing has shown that the lakebed sequence is variable in its aquifer parameters across the lake, testing has shown that there are areas of high flow as well as low flow, being in a position to predict where to place trenches and in what density in order to get the highest possible abstraction

Criteria	JORC Code explanation	Commentary
		per metre of trench will be an important design and operational cost input
		Work is underway to Integrate the shallow push tube analysis results from 2007 with the 2016 trench testing data in order to develop a higher level of understanding of where the high and low flow areas of the lake are.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Not applicable – commercially sensitive.

## Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

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. Data validation procedures used.	Blank, duplicate and spiked samples are regularly used to ensure that analytical data received is accurate and reproducible. Also refer to comments in Section 2 above.
		Internal QA/QC procedures allow for verification and subsequent use of field/laboratory data.
		Core Labs undertook in-house sample integrity tests proper to releasing their specific yield – effective porosity results.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits. If no site visits have been undertaken indicate why this is the case.	The CP visited the site on numerous occasions to review progress of drilling and to understand the positioning of the lake within the surrounding landscape. The CP was involved in selecting the core samples for specific yield – effective porosity analysis and in the development of technical reports setting out the specific yield- effective porosity.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	The geological interpretation is provided above. The core logs provide a good representation of the lake geology The repeatability of the hydrostratigraphy across the core holes provides a high level of confidence. Other data sources include the WAGS regional magnetic data and the WAGS Explanatory notes for the Gununya Sheet.
	Nature of the data used and of any assumptions made. The effect, if any, of alternative interpretations on Mineral Resource estimation	
	The use of geology in guiding and controlling Mineral Resource estimation.	
	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.	For the purposes of estimation a lake area of 1,241km <sup>2</sup> was assumed (as previously reported by Reward ASX release 23 November 2015) and applied to the lake bed sequences and the weathered basement rocks. Sandy sections within the basement rocks have been assigned a nominal distribution of about 700km <sup>2</sup> over three northwest oriented pseudo-rectangular areas coinciding with its occurrence in diamond core drill holes and conforming with regional structural strike (Figure 1). The lake bed sequences were assigned an average grade of 13.4 kg/m <sup>3</sup> ) and weathered basement units assigned an average grade of 11.2 kg/m <sup>3</sup> .
		thickness across all 10 core holes. These parameters are set out in Table 1.
Estimation and modelling techniquesThe 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.The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.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).In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	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. The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such	The estimation technique is based upon determining the volume of each layer and multiplying by the percent specific yield and weight of SOP per cubic metre. The mining proposal is to excavate trenches thereby exposing the brine resources of the lake bed sequences and correspondingly these are the most prospective sequences currently. Work is on-going in planning trench design, configuration and spacing to maximise percentage of recoverable SOP brine from the drainable brine volumes. Although there is an overall slight decrease with depth in SOP
	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).	brine grades of samples from core holes the brine grades a reasonably consistent. Further, the estimate of brin resources within the weathered basement sequence (including the sandy sequences) is an order of magnitude higher than estimates for the lake bed sequences and te pumping analysis suggests the fractured and sandy section
	within weathered basement rocks can have relatively high permeability. As such this unit represents a target for further assessment with drilling and test pumping	

Criteria	JORC Code explanation	Commentary
	units. Any assumptions about correlation between variables. Description of how the geological interpretation was used to control the resource estimates. Discussion of basis for using or not using grade cutting or capping. The process of validation, the checking process used, the comparison of model data to drill hole data, and use of	The mechanism for the reasonably similar grades near surface and at depth is not clear but may be related to relict structure such as joints or bedding plane partings within the weathered basement rocks as identified in core samples. It is envisaged that the recovery of brine stored in the weathered basement would be through production bores targeting the higher permeability fractured and sandy sections with potentially induced leakage of brine from the surrounding less permeable strata into these higher permeability sections.
	reconcination data il avallable.	The indicated resource is made up of the shallow lakebed sequence where there has been extensive field work including geological control, test pumping and laboratory analysis for specific yield – effective porosity and brine chemistry the inferred resource where there is some geological control from the core holes and laboratory analysis for both brine chemistry and specific yield but no test pumping.
		Whilst minima and maxima were considered, average values were used for reporting purposes, it should be noted that all total porosities and specific yield - effective porosities lie within theoretical ranges for the formations recorded.
		The estimates of lake area were taken from previous work, whilst the structural geological interpretation to understand the occurrence of the highly weathered and prospective sand layers within the weathered basement was undertaken using geophysical and geological interpretation.
		Interpolation was not applied to SOP grades due to the sheer volume of data and minimum, average and maximum concentrations and volumetric contents of SOP were used for estimation.
		The lateral and vertical boundaries for the resource estimate are:
		<ul> <li>Lateral: lake perimeter (1:250,000 Topographic Data, Geoscience Australia).</li> </ul>
		<ul> <li>Vertical at depth: the average thickness of each layer was estimated from the core logs.</li> </ul>
		<ul> <li>The total porosity data was taken from Reward's calculated porosities for each 1.5m intervals based on the brine sampling in the core hols and the specific -yield effective porosity values were taken from the Corelab results.</li> </ul>
		Hydrogeological units are fully saturated below 0.5mbgl
		Variable SG's were used in the estimation.
		Porosities and concentrations of K and Mg were provided by Reward Minerals; porosities were confirmed using external independent laboratories using Australian Standard methods and procedures.
		The resource estimated is indicative/inferred in-situ and drainable resource.
		<i>In situ</i> resources are estimated using two methods: one is based on porosity, which assumes all hydrogeological units are fully saturated and voids are filled with brine and the other one is based on volumetric content.
		The solid model was based on data from Bores from LDDH1502 to LDDH1509.

Criteria	JORC Code explanation	Commentary
		The model data/estimation was compared with earlier resource estimates (Reward Minerals ASX Release 13 March 2007 and 23 November 2015). There is a good correlation between the different models and estimates.
		The lakebed sediments, albeit varying in thickness from south to north, are horizontal and continuous. The weathered bedrock is structurally deformed via regional NW – SE folding which may have an attenuation effect on the highly weathered and prospective sand zones within the bedrock sequence in the NE – SW plane whilst extending the zones along strike. Defining this structural control through future drilling is a key future activity.
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	N/A – See below.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	No cut off was used for the specific yield – effective porosity estimate. An average value for each hydrostratigraphic unit was calculated from the Core Lab analysis.
		Grade cut-offs were not employed due to the consistent nature of results.
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.	It is anticipated that brine extraction from the lakebed sequence will be will be undertaken through trenching whilst access to the deeper sand horizons will be via bores.
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.	Brines are made up of sufficient concentrations of K and S for the planned extraction and production of $K_2SO_4$ . Concentrations of Na, CI, Ca and Mg are also such that crystallisation from lake brines will produce a harvest amenable to conventional evaporation and processing 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 green fields 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.	Key environmental impacts noted to date are effects on the water table due to brine extraction and the accumulation of unharvested salts from early evaporation stages. Preliminary modelling indicates that the cone of depression for a trench is unlikely to extend more than 100m either side of a trench. This implies that there will be no impact beyond the lake of pumping from trenches.
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.	Gravimetric moisture content was used to determine bulk density of samples and were taken at regular intervals (<2m). Volumetric porosities were completed as a reasonableness cross check for samples selected at random from all drill holes.
	measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.	These were compared with determinations by external laboratories (Corelab, SGS, E-Precision Laboratory and Soil

Criteria	JORC Code explanation	Commentary
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	and Water Group) using Australian Standards and/or in- house methods and procedures.
Classification	The basis for the classification of the Mineral Resources into varying 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.	All holes drilled to date have shown limited variability both laterally and downhole. Indicated portions of the Mineral Resource is constrained to those areas near drill hole locations or between holes of very similar stratigraphy. The bulk of the inferred mineral resource is from within the low permeability weathered bedrock sequence.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	A review of the Mineral Resource estimate was undertaken by an independent third party consultant with relevant experience.
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. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The Mineral Resource estimates provided are the insitu resource based on total porosity which aligns well to previously stated insitu resource estimates and the drainable resource based on laboratory data provided by Corelab. The drainable resource has been broken down based on the hydrostratigraphic units, each of these units has a different permeability and hydraulic conductivity which implies that each layer will drain at different rates. The higher draining zones are the lakebed sequence and the sand zones within the weathered basement. The Technical report appended provides greater detail on the assumptions and applied in estimating the overall drainable resource.