

# Transcend International Resources Ltd.



Dredging and Land Spirals For Alluvial HM Deposits

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Hydraulic Mining for Virgin Soil HM Deposits

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## About Transcend

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- Transcend has been involved in contract mining at Sierra Rutile Ltd (SRL) since 2014
- We have 7 floating Dredgers mining in the Mogbweno tailings area and 2 land-based spiral units built close to SRL's Mineral Separation Plant (MSP) for tailings reprocessing
- The Dredgers and Land Spirals have a combined capacity to produce in excess of 180,000mt per annum of Heavy Mineral Concentrate (HMC)
- A unique project "Hydraulic Mining for Virgin Soil HM deposits" (HMVS) is currently being carried out in the Pejebu area (a previously mined out area within the SRL concession). The success of this project demonstrates that low-grade areas that were previously considered to be uneconomical can be viably exploited and provide additional revenue streams for the mine owner

## Why Transcend?

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- ✓ Transcend conducts all mining within the parameters set by the mine owner with mine planning and scheduling done in close collaboration. The issues of safety, environmental protection and quality are of paramount importance to Transcend and all aspects comply with the required national and international standards
- ✓ Transcend invests 100% in the equipment and personnel required to operate the mining units. This means that the mine owner does not incur any up-front CAPEX or increased employment costs
- ✓ The mine owner only pays for the derived HMC once produced and only minimal supervision (oversight) is required
- ✓ Transcend operates in an open, honest and transparent manner in order to ensure a good working relationship with the mine owner.

## Dredger

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- The components of the Dredging operation include a system of spirals on a floating platform, a suction boat and a diesel generator
- A suction hose extends from the suction boat to the bottom of the dredge pond and the material is pumped to a series of screens before entry into the spirals unit
- The spirals unit exploits the differing specific gravities to separate the valuable heavy minerals from the lighter silicate minerals to produce a Heavy Minerals Concentrate (HMC)
- The light minerals are pumped to the tailings containment area and the HMC is stockpiled for use in the MSP



18-Spirals Dredger



Dredger at work

## Land Spirals

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The land-based spiral unit is a static plant used to reprocess various tailings streams produced by the MSP. This not only provides further revenue streams but also aids tailing rehabilitation.



## Compliance

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Mine Owner's senior management monitors closely about the compliance of the safety and environmental regulations.





## Our People

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- Transcend employs 45 Chinese nationals in technical and managerial roles, along with over 200 (previously unskilled) Sierra Leonian workers sourced from the local villages
- The employment and transfer of skills and knowledge to the local workers, particularly the younger generation, helps Transcend to gain strong support within the host communities



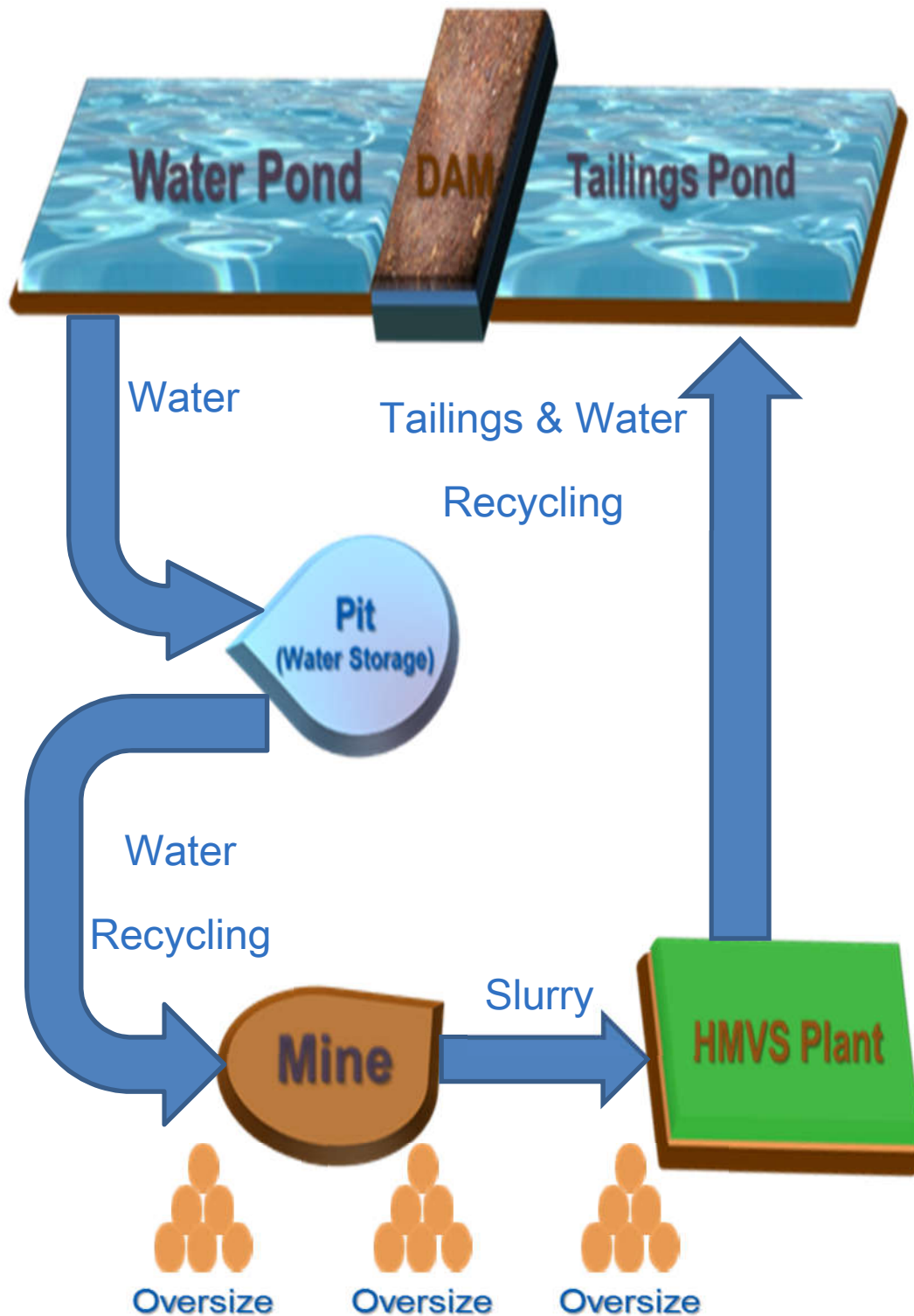
# Hydraulic Mining for Virgin Soil HM Deposits (HMVS) — Pejebu Area

## Introduction of the System and the Workflow



## About the Method

This mining method and practice has been proven in the Chinese ilmenite sector for the past 30 years where it has been employed to produce millions of tonnes on an annual basis.



## Workflow

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### Step 1

Loosen the virgin soil using an excavator



### Step 2

Application of high-speed water jet on the loosened soil



### Step 3

The water jet transforms the loose soil into a pumpable slurry



### Step 4

Large rocks are left behind





## Workflow

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### Step 5

The undersize material falls through the primary screen and the oversize is removed by excavator



### Step 6

The slurry is pumped to the secondary screening unit



### Step 7

Fine particles (slimes) are removed in the sedimentation pond



### Step 8

Slurry from the sedimentation underflow is pumped to the spiral circuit



## Workflow

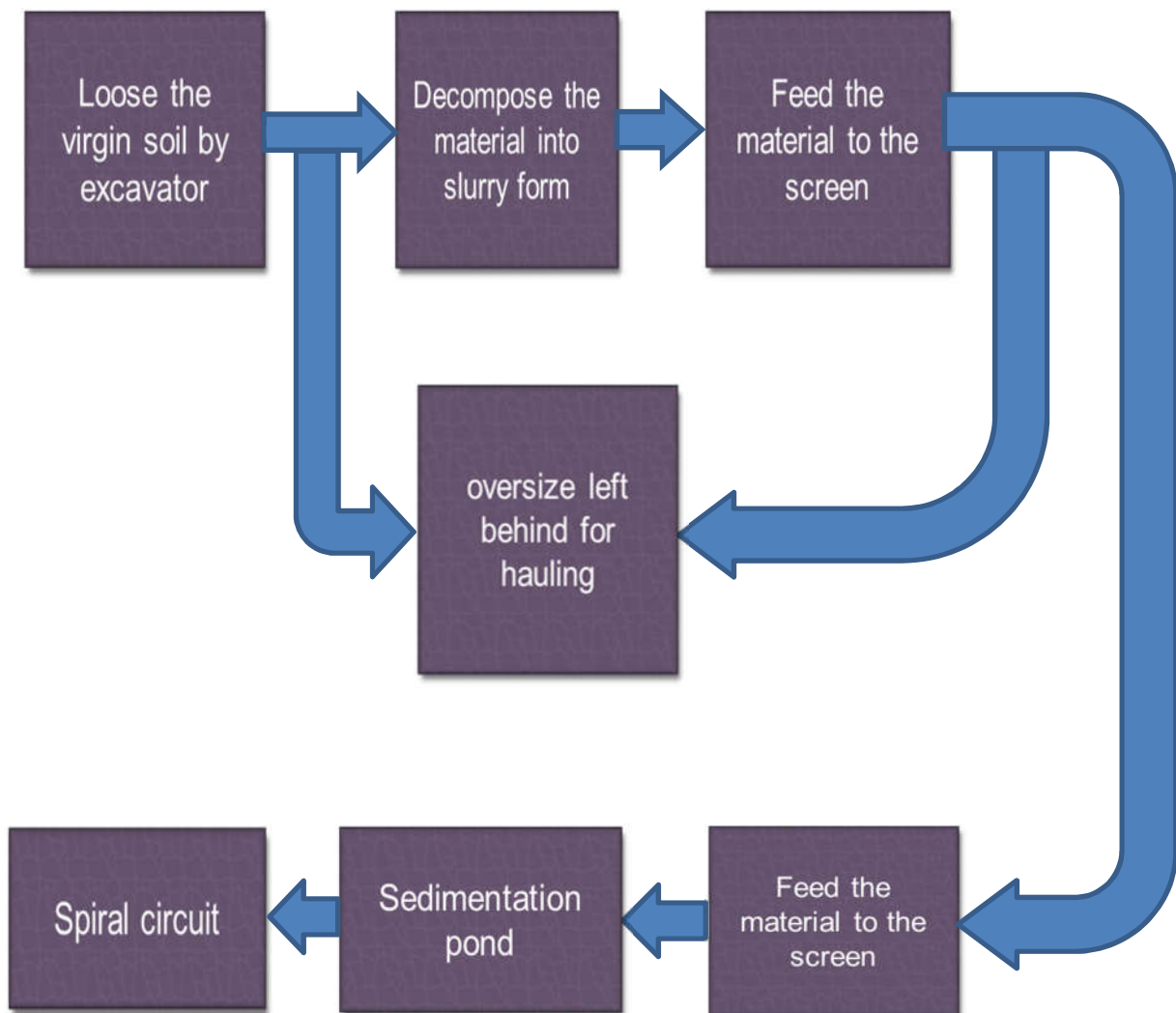
### Step 9

The heavy mineral fraction is concentrated by gravity separation



### Step10

The HMC is stockpiled ready for transportation to the MSP



## Benefits of HMVS

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### UNLEASH POTENTIAL

HMVS can turn low grade areas, which are not viable using conventional mining methods, into profitable operations

### NO CAPEX

100% investment by Transcend. Mine Owner can enjoy additional profit without any additional capital expenditure



### BACK-UP SUPPLY

HMVS provides the Mine Owner with additional material to supplement their own production in times of maintenance shutdown or market fluctuation

### HAULAGE SAVINGS

No unnecessary haulage of oversize material makes significant savings in fuel, truck maintenance and time





## Benefits of HMVS

### Tailings dams

Continuous  
maintenance to  
ensure safety.

### Sustainable

Protect water  
source. Protect life

### Recycle water

HMVS recycles  
water from the  
tailing pond.



Before



After



## Benefits of HMVS

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### NO DISCRIMINATION

Our Hong Kong office enforces a strict, non-discriminatory hiring policy. We only ask that our employees are honest, hardworking and that they adhere to our strict safety and environmental rules

### PEOPLE

Working with the local community

### LOCAL LABOUR

Transcend gives the utmost priority to employing local youths even those with limited or no schooling. With the guidance of our Chinese managers the workers will acquire meaningful skills and experience



## Creating a community of Peace & Harmony

Transcend have set up a charity fund aiming to promote the education and learning standards to the children and young people around the working area with improved learning facilities and environment.

We provide learning materials and classrooms for the promotion and advancement of education or the dissemination of knowledge generally.

### Target Beneficiary

- Local Charities
- Education institutions
- Local Communities

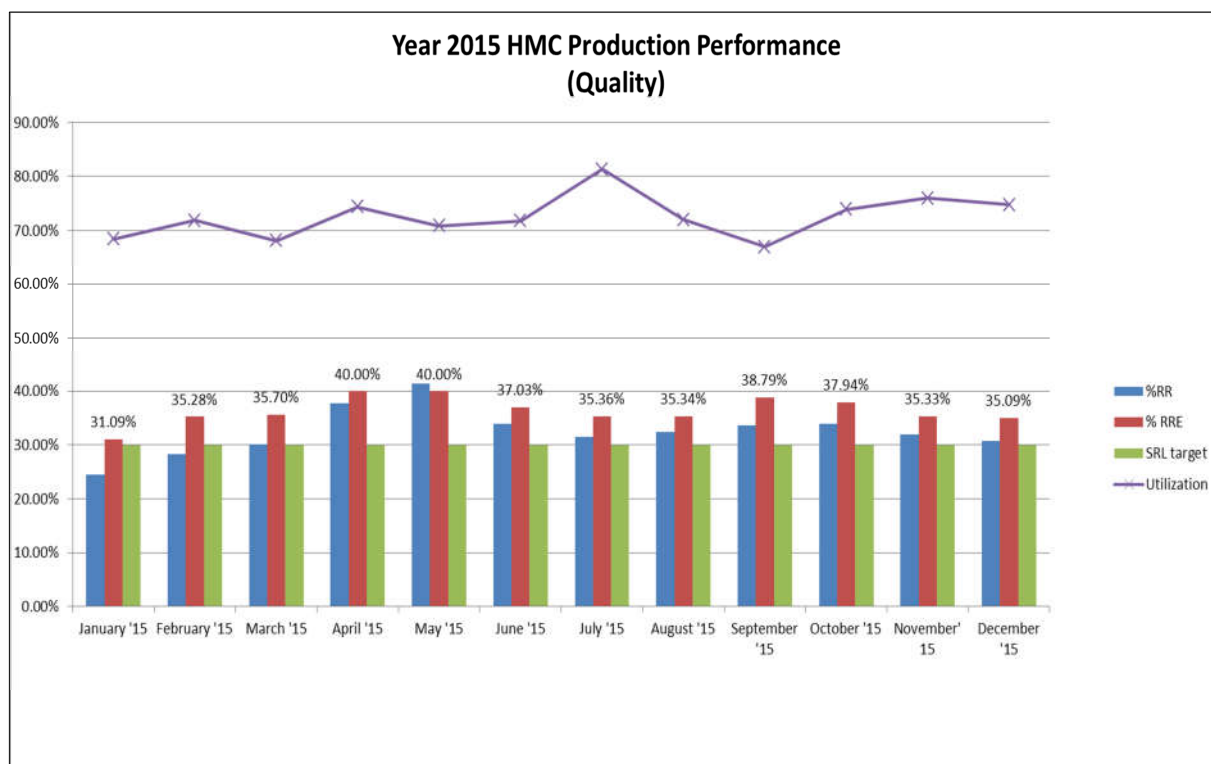
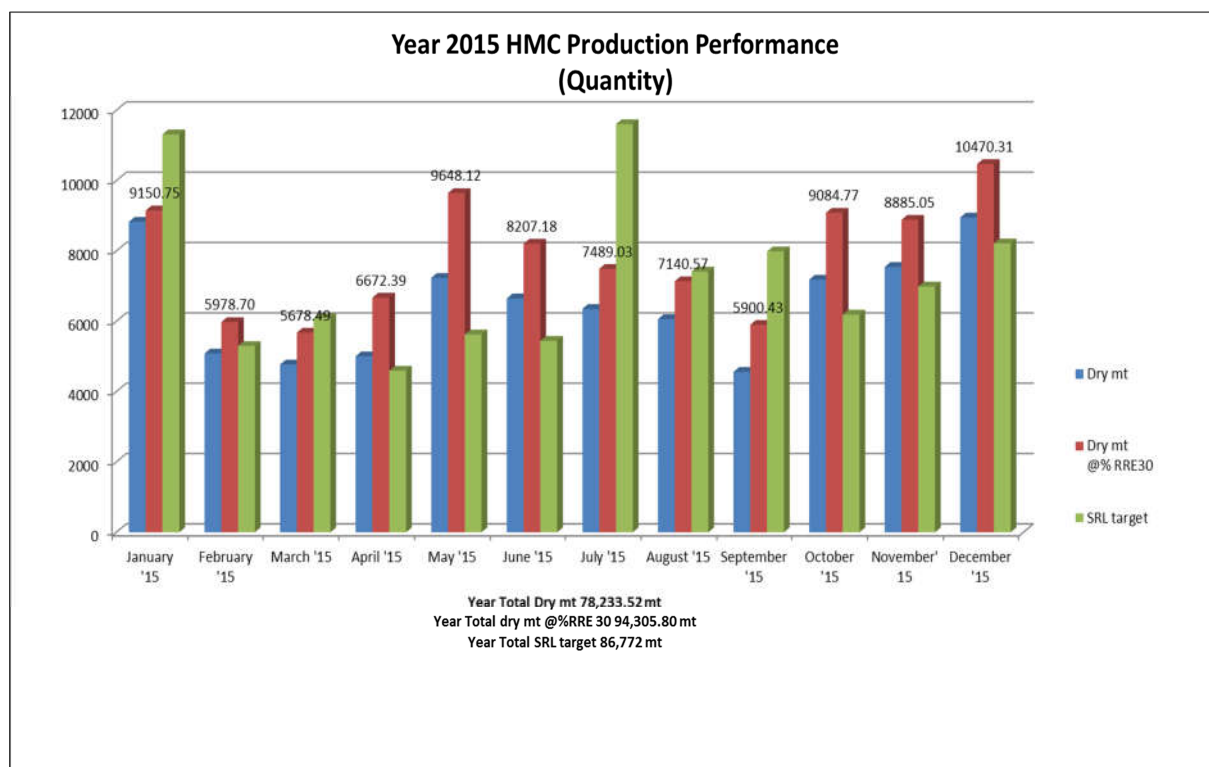


## Our Performance

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Year 2015 HMC Production Performance							
Month	Dry mt	Dry mt @%RRE30	SRL target	%RR	% RRE	SRL target	Utilization
January	8829.93	9150.75	11315	24.45%	31.09%	30%	68.48%
February	5083.93	5978.70	5300	28.32%	35.28%	30%	71.86%
March	4771.84	5678.49	6093	30.07%	35.70%	30%	68.14%
April	5004.29	6672.39	4596	37.71%	40.00%	30%	74.42%
May	7236.09	9648.12	5625	41.36%	40.00%	30%	70.92%
June	6649.52	8207.18	5443	33.94%	37.03%	30%	71.83%
July	6353.65	7489.03	11606	31.54%	35.36%	30%	81.36%
August	6061.50	7140.57	7414	32.38%	35.34%	30%	72.02%
September	4563.13	5900.43	7987	33.63%	38.79%	30%	66.98%
October	7183.17	9084.77	6190	33.89%	37.94%	30%	73.94%
November	7545.68	8885.05	6989	32.03%	35.33%	30%	76.00%
December	8950.78	10470.31	8214	30.74%	35.09%	30%	74.81%
<b>Total :</b>	<b>78233.53</b>	<b>94305.80</b>	<b>86772</b>				

Data by Sierra Rutile Ltd.





Year 2016 HMC Production Performance								
Month	Dry mt	Dry mt @%RRE30	SRL target	%RR	% RRE	SRL target	%RR Feed	Utilization
January	6934.12	8187.35	7700	32.00%	35.42%	30.00%	2.49%	81.95%
February	6986.03	8898.97	7001	34.55%	38.21%	30.00%	2.71%	85.83%
March	9181.01	11065.21	6645	32.68%	36.16%	30.00%	1.97%	88.11%
April	6828.81	8415.76	6431	32.95%	36.97%	30.00%	1.01%	88.48%
May	6710.31	7449.14	5471	29.54%	33.30%	30.00%	1.18%	87.77%
June	6552.37	7326.29	6093	30.10%	33.54%	30.00%	0.83%	86.49%
July	6562.08	7684.83	5059	31.64%	35.13%	30.00%	0.78%	87.95%
August	6503.38	8671.18	4722	37.53%	40.00%	30.00%	0.73%	90.43%
September	6292.09	8194.33	4570	35.63%	39.07%	30.00%	0.73%	89.62%
October	4872.06	5928.70	4000	32.77%	36.51%	30.00%	0.77%	84.94%
November	3769.94	4809.08	3170	35.68%	39.19%	30.00%	1.08%	77.79%
December	3306.81	3649.03	2210	33.10%	36.00%	30.00%	1.14%	80.57%
<b>Total:</b>	<b>74499.01</b>	<b>90279.88</b>	<b>63072</b>					

Data by Sierra Rutile Ltd.

