

## REPORT TO MAYCO

10 MARCH 2023

1. ITEM NUMBER: MC 52/03/23
2. SUBJECT / ONDERWERP / ISIHLOKO

**FEEDBACK ON THE INTERNATIONAL/OUTSIDE THE BORDERS OF THE RSA TRIP UNDERTAKEN FROM 28 JANUARY TO 5 FEBRUARY 2023 FOR THREE BULK WATER STAFF TO ATTEND A TRAINING SESSION ON THE "MÉTÉEAUX NAPPE" TOOLS AT THE FRENCH GEOLOGICAL SURVEY (BRGM) IN ORLÉANS, FRANCE**

*TERUGVOERING OOR DIE BUITELANDSE REIS/BUITE DIE GRENSE VAN DIE RSA VAN 28 JANUARIE TOT 5 FEBRUARIE 2023 ONDERNEEM DEUR DRIE PERSONEELLEDE VAN GROOTMAATWATER OM 'N OPLEIDINGSESSIE OOR DIE "MÉTÉEAUX NAPPE" BY DIE FRANSE GEOLOGIESE NAVORSINGSBURO (BRGM) IN ORLÉANS, FRANKRYK BY TE WOON*

**INGXELO ENGOHAMBO OLUYA PHESHEYA/ NGAPHAYA KWEEBHODA ZOMZANTSI AFRIKA OLUTHATYATHWE UKUSUSELA NGOWAMA28 KWEYOMQUNGU UKUYA KOWE5 KWEYOMDUMBA 2023 LABASEBENZI ABATHATHU BEZAMANZI LOKUZIMASA ISESHONI YOQEQESHO OLUNGEZIXHOBO ZE"METÉEAUX NAPPE" KWIFRENCH GEOLOGICAL SURVEY (BRGM) E-ORLÉANS, FRANCE**

[P2647]

3. **RECOMMENDATION FROM THE WATER AND SANITATION PORTFOLIO COMMITTEE: 02 MARCH 2023 (ITEM WS 09/03/23)**

**RECOMMENDED** that the feedback report on the trip to attend a training session on the "Meteeaux Nappe" tools at the French Geological Survey (BRGM) in France (Orléans) between 28 January to 5 February 2023 undertaken by Candice Lasher-Scheepers, Philani Msimango and Lloyd Fisher-Jeffes be **BE NOTED**.

**AANBEVEEL** dat **DAAR KENNIS GENEEM WORD** van die terugvoerverslag oor die reis wat deur Candice Lasher-Scheepers, Philani Msimango en Lloyd Fisher-Jeffes van 28 Januarie tot 5 Februarie 2023 onderneem is om 'n opleidingsessie oor die "Météeaux Nappe" by die Franse geologiese navorsingsburo (BRGM) in Orléans, Frankryk, by te woon.

**KUNDULULWE** ukuba **MAKUQWALASELWE** ingxelo engasemva kohambo ukuzimasa iseshini engezokeqesho ngokujoliswe kwizixokelelwane eziyi"Meteeaux Nappe" kwiFrench Geological Survey (BRGM) ebiseFrance (eOrléans) phakathi kowama28 kweyoMqungu ukuya kowe5 kweyoMdumba 2023, eqhutywe nguCandice Lasher-Scheepers, Philani Msimango noLloyd Fisher-Jeffes.

[P3031]



**REPORT TO: CITY MANAGER**

**TO BE REFERRED BY THE OFFICIAL TO MAYCO VIA THE WATER AND SANITATION PORTFOLIO  
SECTION 79 COMMITTEE [AFTER CONSIDERATION BY CITY MANAGER]**

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**1. ITEM NUMBER**

**FEEDBACK ON THE INTERNATIONAL/OUTSIDE THE BORDERS OF THE RSA TRIP  
UNDERTAKEN FROM 28 JANUARY TO 5 FEBRUARY 2023 FOR THREE BULK WATER STAFF TO  
ATTEND A TRAINING SESSION ON THE “MÉTÉEAUX NAPPE” TOOLS AT THE FRENCH  
GEOLOGICAL SURVEY (BRGM) IN ORLÉANS, FRANCE.**

**TERUGVOERING OOR DIE BUITELANDSE REIS/BUITE DIE GRENSE VAN DIE RSA VAN 28  
JANUARIE TOT 5 FEBRUARIE 2023 ONDERNEEM DEUR DRIE PERSONEELLEDE VAN  
GROOTMAATWATER OM 'N OPLEIDINGSESSIE OOR DIE “MÉTÉEAUX NAPPE” BY DIE  
FRANSE GEOLOGIESE NAVORSINGSBURO (BRGM) IN ORLÉANS, FRANKRYK BY TE WOON.**

**INGXELO ENGOHAMBO OLUYA PHESHEYA/ NGAPHAYA KWEEBHODA ZOMZANTSI AFRIKA  
OLUTHATYATHWE UKUSUSELA NGOWAMA28 KWEYOMQUNGU UKUYA KOWE5  
KWEYOMDUMBA 2023 LABASEBENZI ABATHATHU BEZAMANZI LOKUZIMASA ISESHONI  
YOQEQESHO OLUNGEZIXHOBO ZE“MÉTÉEAUX NAPPE” KWIFRENCH GEOLOGICAL SURVEY  
(BRGM) E-ORLÉANS, FRANCE**

**P2647**

### 3. EVENT SUMMARY

<b>EVENT DETAILS</b>	
CONFERENCE/SEMINAR	Training Session On The “Météeaux Nappe” Tools
OTHER	
DATE	28 Jan to 5 Feb 2023 (Home a day earlier due to change in flight details)
VENUE	The French Geological Survey (BRGM)
TOTAL COST TO THE CITY	R 57 773.13 (S&T not paid for travel days to comply with Cost Containment Policy)
CITY	Orléans
COUNTRY	France
<b>ATTENDEE DETAILS</b>	
NAME AND SURNAME	DESIGNATION
Candice Lasher-Scheepers	PPO: Geohydrologist
Philani Msimango	SPO: Geohydrologist
Lloyd Fisher-Jeffes	PPO: Decision Support Systems & Data Management (Technical Services Manager as at 1 Feb 2023)
<b>PROVIDE SUMMARY OF HOST ORGANISATION / CITY</b>	
This technical cooperation falls under the Memorandum of Understanding signed between the City of Cape Town and the French Development Agency (AFD) on February 19th, 2021, in respect of AFD's support to the CCT for the implementation of its Water Strategy. It is governed by the Three-party FEXTE Agreement n°CZA1211 01 P. The AFD made a financial contribution of five hundred thousand Euros (€500,000) to allow the French Geological Survey (BRGM) to execute technical services to the City.	

### 4. OBJECTIVE

The main purpose of this trip was to:

- Attend training on the “Météeaux Nappe” and Gardenia tools
- Visit the springs and water supply for Paris

In effort to achieve regulatory compliance as well as the optimal management and utilization of groundwater as a resource, the CCT needs to ensure that sufficient groundwater modelling and monitoring is undertaken. The sessions therefore included the use of groundwater forecasting tools (monitoring and reporting) and on the job and in-house training in groundwater modelling and characterization.

### 5. OUTCOMES

The three staff members completed the training course (see attached) and visited the water supply infrastructure which supplies the city of Paris.

BRMG supplied the staff members with the latest version of the modelling software and profiled them for Météaux Nappe which is the linked web-based spatial tool. The long-term monitoring borehole (H8A3) data was added to Météaux Nappe and further correlation with H1A4A is required as the former is now influenced by pumping conditions.

A discussion regarding shortfalls of the project and how it can be strengthened was held at the end and additional data was requested to re-modellers the catchment in Gardenia.

A further discussion relating to Task 3 of the project was also held as the collaborating university required additional data and requested input from CCT.

## 6. ACTIONS REQUIRED

The following actions are therefore noted:

- Additional data to be sent to BRGM for task 2 of the project.
- Additional data to be sent to BRGM for task 3 of the project.
- CCT to install Gardenia software on CCT laptops.
- CCT to practice modelling and run re-calibration with software.
- CCT to ensure data is continuously provided to BRGM via API/FTP.
- Follow-up training to take place in Cape Town around September 2023.
- Conference presentation and paper to be submitted for the International Association of Hydrogeologists Congress in September 2023 by BRMG, support by CCT.
- CCT to relook at specifications for groundwater monitoring equipment to reduce data discrepancies and improve processes.
- CCT staff to advise on whether a similar web portal can be used to present data to the public in an informative and simplistic manner.

## 7. IMPLICATIONS

<b>7.1</b>	<b>Constitutional and Policy Implications</b>	No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>
<b>7.2</b>	<b>Environmental implications</b>	No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>
<b>7.3</b>	<b>Financial Implications</b>	No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>
<b>7.4</b>	<b>Legal Implications</b>	No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>
<b>7.5</b>	<b>Staff Implications</b>	No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>
<b>7.6</b>	<b>Risk Implications</b>	No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>
<b>7.7</b>	<b><u>POPIA Compliance</u></b>		



It is confirmed that this report has been checked and considered for POPIA Compliance.

*NOTE: POPIA Section MUST be completed otherwise the report will be returned to the author for revision.*

*Contact your Directorate POPIA Stewards should you require assistance.*

**The City has a contract in place with XL Embassy Travel for the safe-keeping of Traveller's personal information as required by the POPI Act.**

## 8. RECOMMENDATIONS

It is recommended that the feedback report on the trip **to attend a training session on the "Météaux Nappe" tools at the French Geological Survey (BRGM) in France (Orléans) between 28 January to 5 February 2023** undertaken by Candice Lasher-Scheepers, Philani Msimango and Lloyd Fisher-Jeffes **be considered and noted.**

Daar word aanbeveel dat die terugvoeringsverslag oor die reis van 28 Februarie tot 5 Februarie 2023 onderneem deur Candice Lasher-Scheepers, Philani Msimango en Lloyd Fisher-Jeffes om die "Météaux Nappe" by die Franse geologiese navorsingsburo (BRGM) in Frankryk (Orléans) by te woon, oorweeg en daarvan kennis geneem word.

Kundululwe ukuba makuthathelwe ingqalelo kwaye kuqwalaselwe ingxelo engohambo lokuzimasa iseshoni yoqeqesho olungezixhobo ze "Météaux Nappe" kwiFrench Geological Survey (BRGM) eFrance (Orléans), ukususela ngowama28 kweyoMqungu ukuya kowe5 kweyoMdumba 2023 oluthatyathwe nguCandice Lasher-Scheepers, Philani Msimango noLloyd Fisher-Jeffes.

## 9. GENERAL DISCUSSION

### 28 January 2023

Arrived in Orleans (France) late afternoon and checked into hotel.

### 29 January 2023

Met with the training facilitator and discussed logistics for the week.

### 30 January 2023

- The BRGM Formation team welcomed us and a round of introductions were done.
- A brief presentation of the project and progress so far was provided.
- The facilitator presented the following training topics:
  - Modelling principles in hydrogeology.
  - Artificial intelligence in BRGM studies.
- After the training session a visit to BRGM lab: PRIME hall + DEPA/ISO was conducted.

### 31 January 2023

- Field visit to a BRGM piezometer and a discussion on the data loading chain thereof.
  - During the site visit and discussion CCT start highlighted the need for a change in technology currently used to reduce data discrepancies and improve processes.
- The MétéEAU Nappes” portal: principles and functioning. The training provided information on:
  - What a model is and why we model
  - The common modelling workflow
  - Typology of models and their use
  - Calibration/history matching
  - Modelling uncertainties

### 1 February 2023

- Technical exchange on data recovery before modelling
- Training on lump hydrological modelling (GARDENIA software)
- The trainer provided exercises and allowed us to practice with guidance.
- Lunch with Dominique Darmendrail , Water and global changes Programme Director

### 2 February 2023

- Training on lump hydrological modelling (GARDENIA software) - continued
- We worked on a model with Steenbras data. Identified outstanding data which should improve the model calibration.

### 3 February 2023

- Field trip to Armentières and other springs, which is the sources of Paris water supply.
- We met with Paris Water Public Service, Eau de Paris.
  - They supply three million users (similar to CCT)
  - 190 M m3 of drinking water produced each year (500 000 m3/day)
  - Diversity of resources capturing both surface water and groundwater (102 groundwater & 2 rivers abstraction points)

### 4 February 2023

Time off due to flight availability.


### 5 February 2023


Depart France Airport around 10:20 and land in Cape Town around 22:35.

**10. ANNEXURES**

ANNEXURE A : Completion certificates


**FOR FURTHER DETAILS, CONTACT:**

DATE	14 February 2023		
NAME	Candice Lasher-Scheepers	CONTACT NUMBER	0788022182
E-MAIL ADDRESS	Candice.LasherScheepers@c apetown.gov.za		
DIRECTORATE	Water and Sanitation	FILE REF No	
SIGNATURE :	 <small>Digitally signed by Candice Lasher-Scheepers Date: 2023.02.14 15:17:42 +02'00'</small>		


Digitally signed by M.A. KILICK  
Date: 2023.02.15  
10:30:53 +02'00'
**EXECUTIVE DIRECTOR**

COMMENT:

The ED's signature represents support for report content and confirms POPIA compliance.

SIGNATURE:  Digitally signed by Michael John Webster  
Date: 2023.02.15  
23:11:44 +02'00'

NAME \_\_\_\_\_

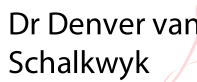
DATE \_\_\_\_\_

**MANAGER: INTERNATIONAL RELATIONS**

COMMENT:

DR. DENVER VAN SCHALKWYK

Actions noted

SIGNATURE:  Digitally signed by Dr Denver van Schalkwyk  
Date: 2023.02.16 08:35:02  
+02'00'

DATE \_\_\_\_\_



Joan-  
Mari  
Holt

Digitally signed  
by Joan-Mari Holt  
Date: 2023.02.16  
11:11:55 +02'00'

## LEGAL COMPLIANCE

☐ REPORT COMPLIANT WITH THE PROVISIONS OF COUNCIL'S DELEGATIONS, POLICIES, BY-LAWS AND ALL LEGISLATION RELATING TO THE MATTER UNDER CONSIDERATION.

☐ NON-COMPLIANT

### COMMENT:

NAME

Certified as legally compliant based on the contents of the report.

TEL

DATE



Digitally signed by Lungelo  
Mbandazayo  
Date: 2023.02.16 14:57:39 +02'00'

CITY MANAGER

☒ NOTED

☒ REFER TO THE MAYORAL COMMITTEE VIA THE RELEVANT SECTION 79 COMMITTEE

DATE

### COMMENT:

# CERTIFICATION OF TRAINING

BRGM TRAINING CERTIFIES THAT

Candice LASHER-SCHEEPERS

HAS COMPLETED THE TRAINING COURSE:

## BRGM support to the City of Cape Town for Water Management<sup>849</sup>

30 JANUARY – 3 FEBRUARY 2023, Total hours: 39

TRAINERS: Bruno MOUGIN and Alexis GUTIERREZ  
Senior Hydrogeologist at BRGM

Anne MAUGER

*Division of Innovation, Business and  
International Cooperation*  
Head of BRGM Training



SIGNED BY:  
**ANNE MAUGER**  
HEAD OF BRGM TRAINING  
DATE: 3 FEBRUARY 2023

# CERTIFICATION OF TRAINING

BRGM TRAINING CERTIFIES THAT

Mr. Philani P. MSIMANGO

HAS COMPLETED THE TRAINING COURSE:

## BRGM support to the City of Cape Town for Water Management<sup>851</sup>

30 JANUARY – 3 FEBRUARY 2023, Total hours: 35

TRAINERS: Bruno MOUGIN and Alexis GUTIERREZ  
Senior Hydrogeologist at BRGM

Anne MAUGER

*Division of Innovation, Business and  
International Cooperation*  
Head of BRGM Training



SIGNED BY:  
**ANNE MAUGER**  
HEAD OF BRGM TRAINING  
DATE: 3 FEBRUARY 2023



# CERTIFICATION OF TRAINING

BRGM TRAINING CERTIFIES THAT  
Lloyd FISHER-JEFFES

HAS COMPLETED THE TRAINING COURSE:  
**BRGM support to the City of Cape  
Town for Water Management**  
30 JANUARY – 3 FEBRUARY 2023, Total hours: 35<sup>h</sup> 55<sup>m</sup>

TRAINERS: Bruno MOUGIN and Alexis GUTIERREZ  
Senior Hydrogeologist at BRGM

Anne MAUGER  
*Division of Innovation, Business and  
International Cooperation*  
Head of BRGM Training



SIGNED BY:  
**ANNE MAUGER**  
HEAD OF BRGM TRAINING  
DATE: 3 FEBRUARY 2023

