

Auditor Credentials Form

International Cyanide Management Code Audit

Facility Audited: Kinross Gold Corporation, Chirano Gold Mining Ltd. – Chirano Gold Mine, Ghana

Audit Date: 4 November 2019 through 8 November 2019

Lead Auditor Credentials

Lead Auditor: Clinton Phaal – Practitioner Member, IEMA

Auditor Certification No.: 0024259

Certifying Organization

Institute of Environmental Management and Assessment (IEMA)
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Lead Auditor Experience:

Clinton Phaal, PIEMA – Ramboll UK Limited

Year	Type of Facility/Type of Audit Led	Country
2019	Lead Auditor: On behalf of Kinross Gold Corporation, conducted an International Cyanide Management Code recertification audit of the Tasiast Mine located in Mauritania.	Mauritania
2019	Lead Auditor: On behalf of Kinross Gold Corporation, conducted an International Cyanide Management Code recertification audit of the Round Mountain Gold Corporation Gold Mine located in Nevada, USA.	USA
2019	Lead Auditor for ICMC recertification of Eldorado Gold Corporation/Tüprag Metal Madencilik Sanayi ve Ticaret AS (Tüprag) Kışladağ Gold Mine.	Turkey
2019	On behalf of Georgian Manganese conducted an environmental assessment of mining and processing facilities to identify environmental liability issues in advance of Georgia acceding to EU legislation.	Federation of Georgia
2016	Lead Auditor: On behalf of Chukotka Mining and Geological Company and Kinross Gold Corporation, conducted an International Cyanide Management Code recertification audit of the Kupol Gold Mine located in Russia.	Chukotka, Russian Federation

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2016	Lead Auditor: On behalf of Kinross Gold Corporation, led an International Cyanide Management Code (ICMC) re-certification audit of the Chirano Gold Mine located in southwestern Ghana.	Ghana
2016	Lead Auditor: On behalf of Flint Group, completed environmental and health and safety compliance audits of eight printing ink facilities located throughout South Africa.	South Africa
2016	Lead Auditor: Golden Star Resources, Ghana. Led the Audit for the ICMC (International Cyanide Management Code) recertification of the Wassa gold mining operations.	Ghana
2016	Lead Auditor: Golden Star Resources, Bogoso Mine, Western Ghana. Led the Audit for the interim ICMC audit undertaken of the cyanide facilities at the Golden Star (Bogoso/Prestea) Limited (GSBPL) mining operation.	Ghana
2016	Auditor: Part of a multidisciplinary team assessing environmental compliance liabilities relating to a large portfolio (approximately 800 sites) of fuel retail sites and depots located throughout South Africa.	South Africa, Botswana
2015-2016	Project Manager and Lead Auditor: Environmental Due Diligence review of SunChemical Corporation printing ink facility located in Maitland, Cape Town, to identify any significant environmental liabilities, specifically relating to potential impacts to soil and groundwater.	South Africa
2015	Project Manager and Reviewer: Support to Bauba Platinum Limited for the development of three Greenfield underground platinum mines within the Limpopo Province of South Africa including a scoping process as part of the EIA Phase for the project.	South Africa
2015	Project Manager and Lead Auditor: On behalf of Chromaflo, conducted a Phase I Environmental Site Assessment to determine pre-lease baseline conditions for a proposed ink manufacturing facility in Johannesburg, South Africa.	South Africa
2015	Project Manager: On behalf of TOTAL completed compliance audits of 18 fuel retail sites located across Botswana to evaluate and assess the compliance of the current operational activities against Environmental Management Plans (EMPs) developed for the sites.	Botswana
2015	Project Manager and Auditor: Environmental Due Diligence review of SunChemical Corporation's printing ink facility in Robertsham, Johannesburg, to identify any significant environmental liabilities, specifically relating to potential impacts to soil and groundwater and compliance issues.	South Africa
2015	Project Reviewer: Managed and reviewed an assessment and verification audit of AfriSam's Springvalley Quarry	South Africa

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	Environmental Management Programme Report (EMPR) in accordance with Regulation 55 of the Mineral and Petroleum Resources Development Act (MPRDA).	
2015	Auditor: International Cyanide Management Code (ICMC) pre-assessment of the Golden Star Resources Wassa Mine in Ghana in January 2015, in advance of the ICMC recertification audit.	Ghana
2015	Project Manager: Project managed and reviewed an environmental compliance audit of DB Thermal located in Nigel.	South Africa
2015	Project Manager: of pre-acquisition environmental due diligence site assessments and compliance audits of four Nampak packaging facilities located in Durban, Cape Town and Port Elizabeth.	South Africa
2014	Lead Auditor: On behalf of Kinross Gold Corporation, led an International Cyanide Management Code (ICMC) re-certification audit of the Fort Knox Gold Mine located in Alaska, USA.	USA
2014	Lead Auditor: Completed an environmental due diligence liability assessment and compliance audit of a carbon black production facility for Orion Engineered Carbons.	South Africa
2013	Lead Auditor: on behalf of Albemarle Corporation completed an environmental compliance audit of the Jordan Bromine Company UBC facility located in the Safi region of Jordan and storage and shipping facility at Aqaba on the Red Sea.	Jordan
2013	Lead Auditor: Environmental Health and Safety compliance audit of a Givaudan flavours production facility located in Tullisa Park, Johannesburg.	South Africa
2013	Lead Assessor: Completed a high-level environmental risk assessment (ERA) of over 5000 fuel retail forecourt and commercial properties located throughout South Africa. The objective of the assessment was to prioritise sites for further investigations.	South Africa
2013	Project Manager: Environmental Site Assessments of 89 fuel retail stations throughout north eastern South Africa. The scope of work included targeted soil and groundwater sampling and interpretation of analyses.	South Africa
2013	Project Manager: for a high-level environmental site assessment of approximately 2000 hectares of land formally associated with a chemical facility on behalf of a prospective developer. The purpose of the assessment was specifically to identify any contaminated land liabilities.	South Africa

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2013	Project Manager: for pre-acquisition environmental due diligence (EDD) on behalf of buyer. Site activities included industrial pump assembly and the manufacture of urethane pipe lining for Clyde Blowers in Richards Bay, South Africa.	South Africa
2012-2013	Lead Auditor: On behalf of Total South Africa, managed and completed environmental reviews and site assessments including contamination audits of 13 fuel retail stations located throughout 4 Provinces in South Africa.	South Africa
2011-2012	Lead Auditor: Environmental review, site assessment and project brief prepared in support of an Environmental Authorisation in accordance with Ugandan regulations for Environmental Impact Assessments.	Uganda
2012	Project Manager and Lead Auditor for pre-acquisition due diligence assessments of 14 storage warehouses, a pasta production plant and flour mill in Abidjan.	Cote d'Ivoire.
2012	Technical Auditor: Involved in the pre-acquisition EDD assessment of a former steel foundry site and soap production plant in Abidjan and Bonoua, Cote d'Ivoire, included managing an intrusive ground investigation.	Cote d'Ivoire.
2012	Project Manager and Auditor: Environmental and compliance assessment of three ink packaging and mixing facilities as part of a divestiture process in Cape Town, Durban and Johannesburg, South Africa. The scope of work consisted of a site visit and review of site operations and existing documentation to identify potential environmental liabilities.	South Africa
2012-2013	Conducted an environmental assessment of a site for the proposed construction of a fertiliser blending plant in Tema, Ghana. The scope of work included a review of permitting requirements through the environmental impact assessment (EIA) process and identification of environmental restrictions to development.	Ghana
2010-2013	Project Manager and Lead Auditor: overseeing compliance audits of three oil and gas industry support and service centres located in Luanda.	Angola
2011	Project Manager: Pre entry environmental site assessment (ESA) of the ABS Alloys and Metals SA facility located in Isando, South Africa.	South Africa
2011	Manager: Pre acquisition EDD audit and site investigation of an industrial facility manufacturing specialist submersible pump parts for the offshore oil and gas industry in Chonburi Province, Thailand.	Thailand

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2011	Prepared environmental registers and a compliance review for a communications network provider with on area of operations in South Africa.	South Africa
2011	Project Manager: Managed and completed a high-level ESA of the Zincor (Exxoro) electrolytic zinc refinery located near Springs, South Africa.	South Africa
2009-2010	Lead staff overseer: Provision of support to aluminium processing facilities in a number of international locations for environmental, health and safety (EHS) audits.	International
2009	Project coordinator: Environmental Due Diligence audits of over 30 chemical facilities servicing the offshore drilling industry in Canada. Work comprised site visits, soil sampling and reporting within three weeks of commission.	Canada
2009	Project Manager and Lead Auditor: Pre-acquisition environmental audits of facilities fabricating specialised oil drilling equipment within the Russian Federation.	Russia
2008-2010	Integral to establishing an environmental management team seconded to the client during the construction phase of a new coal fired power station in the Limpopo province for Eskom South Africa. Completed benchmarking audits and provided on-going auditing services and strategic environmental support during construction. Additionally, seconded over a short period as environmental manager for the project.	South Africa
2009	Completed pre-acquisition environmental due diligence audits of a food production and vegetable oil plant in the Kherson Oblast, Ukraine for a confidential client.	Ukraine
2009	Project Manager: Environmental due diligence audit process for the establishment of oil and gas support services and storage yard in Erbil, Kurdistan.	Kurdistan
2008	Project Manager: EHS audits of facilities located in Pakistan, France and Tunisia for a confidential client.	Pakistan, France and Tunisia
2008	Project Manager: Environmental audit of an oil and gas industry service centre located in Luanda and prepared an environmental impact statement for a proposed base expansion and blend plant installation on behalf of Baker Hughes Angola.	Angola
2008	Project Manager: Pre-acquisition due diligence assessment and targeted intrusive investigation of a metal recycling facility in Chorzow, Poland for Celsa.	Poland
2008	Manager: Environmental due diligence audit of an industrial oil and lubricant target company in Germany for a US client.	Germany

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2007	Project Manager: Pre acquisition due diligence audit of a steel works in Donetsk, Ukraine for Celsa.	Ukraine
2007	Manager: Environmental due diligence audit of a proposed gas pipeline onshore reception facility near Ashkelon, Israel for BG Group in accordance with IFC guidelines.	Israel
2006-2007	Project Manager: Pre-acquisition and developmental environmental assessment for the construction of a nitrogen plant and a watching/auditing brief during subsequent construction phase.	United Kingdom
2006	Undertook pre-acquisition due diligence audits of cotton processing sites located in South Africa, Malawi and Zambia for a cotton commodities business.	South Africa, Malawi and Zambia
2005	Project Manager: Managed and completed environmental due diligence audits and subsequent intrusive investigations of a vegetable oil refinery in Podari and an oil bottling plant in Craiova, Romania for Cargill. Provided input to subsequent remedial works.	Romania
2003	Completed Phase I Environmental due diligence assessments of more than 50 sites in Romania for a confidential client. Subsequent Phase II intrusive investigations were completed on a further seven facilities.	Romania

Cyanide Operation Experience - Technical Auditor

Technical Auditor Experience

Adrián Juárez (Ph.D Hydrology) CTA - Consultoria y Tecnologia Ambiental

Year	Type of Facility/Type of Audit Led	Country & State/Province
2019-20	Lundin Gold, Aurelia Ecuador. Fruta del Norte Gold Mine. Cyanide Code continuous compliance review.	Ecuador
2019	Torex Gold; Minera Media Luna, S.A de C.V. ICMC pre-assessment audit of Morelos gold mining facility	Guerrero, Mexico
2017	Hochschild Mining, San José Mine. ICMC pre-assessment audit of gold mining facility	Santa Cruz, Argentina
2016	Guyana Goldfields, Technical auditor for the ICMC certification audit of the Aurora Gold mine.	Cuyuni-Mazaruni, Guyana

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2016	Kinross Gold Corporation, Technical Auditor for the ICMC recertification audit of the Kupol Mine.	Chukotka A.O., Russian Federation
2015	Kinross Gold Corporation, Kettle River Operations, Technical Auditor for a Cyanide Code recertification Audit of the Kettle River Operations, Washington.	USA
2015	Agnico-Eagle Mines Limited. Technical auditor for a preliminary Cyanide Code review of Mascota Gold Mine.	Chihuahua, Mexico
2014	Kinross Gold Corporation, Fort Knox Gold Mine, Technical Auditor for a Cyanide Code recertification Audit	Alaska, USA
2012	Agnico-Eagle Mines Limited. Technical auditor for a preliminary Cyanide Code review of the Pinos Altos Gold Mine.	Chihuahua, Mexico
2012	Minera Mexicana La Cienega S.A. de C.V. Technical auditor for a precertification audit of the La Cienega Mine operation in Durango.	Mexico
2012	Minera Frisco S.A.B. de C.V, Unidad San Felipe, Technical auditor for a preliminary ICMC review of the San Felipe Mine located in Baja California, Mexico.	Mexico
2011	Fresnillo, Plc. Minera Mexicana La Cienega S.A. de C.V. Technical Auditor for an ICMC preassessment of the La Cienega Mine.	Mexico
Cyanide related Operations		
2016-17	Torex Gold. Minera Media Luna, Project Director, ESIA for the expansion of the Morelos gold mine	Guerrero, Mexico
2015-16	Aura Minerals. Project Director, Mercury and arsenic studies at San Andres Mine	Honduras
2009-19	Primero Mining & First Majestic Silver, Project Director. Aquatic biology studies at the Piaxtla river, for San Dimas Mine	Durango, Mexico
2010-2020	Goldcorp & Newmont. Project Director. Peñasquito Gold Mine. Air Emissions inventory, Air Quality Modelling, Baseline for community water wells.	Zacatecas, Mexico
2012-2019	Goldcorp, Project Director. Cerro Negro Gold Mine. Environmental management system review, Air Emission inventory, and partial implementation of TSM (Towards Sustainable Mining) protocols for tailings.	Santa Cruz, Argentina
2002-19	Glamis, Goldcorp, & Newmont. Project Director. Marlin Gold Mine. Aquatic biology, environmental and social baseline and monitoring studies, ESIA, hydrogeology, compliance reporting.	Guatemala

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2002-20	Glamis, Goldcorp & Bluestone Resources. Project Director. Cerro Blanco Gold Project. Aquatic biology, environmental and social baseline and monitoring studies, ESIA, hydrogeology, compliance reporting.	Guatemala
2012-15	Goldcorp. Project Director. El Sauzal Gold Mine. Aquatic Biology studies.	Chihuahua, Mexico
2004-2015	Pacific Rim Mining Corporation & Oceana Gold. Project Director. El Dorado Gold Project. Environmental baseline studies, ESIA and air quality monitoring program	El Salvador

Statement of No Conflict

I certify that I have not audited any component of this facility for which I was responsible for design or development; nor have I within the past year been an employee of the facility, its parent company, or associated affiliates. Excluding audits, I have not derived more than 30% of my income within the past 5 years from the facility, its parent, or associated affiliates. I have not participated in more than two consecutive Cyanide Code audits of this facility. I have participated in at least 3 health, safety, and/or environmental audits in the past 7 years and am familiar with standard audit procedures as well as with the protocols developed by the International Cyanide Management Institute for implementation of the Code.

Signed, Name

Signature

Lead Auditor* Clinton Phaal

Clinton Phaal 26/3/2020

Auditor Adrián Juárez

A. JUÁREZ 26/3/2020

* Notarized as indicated

Name:	Louis Crafford
Signature	<i>Louis Crafford</i>
	Commissioner of Oaths Ex Officio: Chartered Accountant (SA)
Address:	48 Jacaranda street Kempton Park 1619
Date:	26/03/2020.