



2011

2012

2013

2014

2015

2016

2017

2018

2019

2020

2021



**PXRFS Undertakes a Significant Evaluation of portable XRF Instruments**

The study focuses on precision and accuracy on individual portable XRF instrument ability to continually provide consistent results on the same certified reference material.

**1st July 2011**

Official Launch Day as Portable XRF Services (PXRFS).

First iteration of hire fleet is complete.

**AUGUST  
Chris & Nigel Present Study Findings Internationally**

The study findings are presented at the Denver X-Ray Conference, USA.

**FEBRUARY  
Study published**

in peer reviewed journal *Geochemistry: Exploration, Environment, Analysis*, under title, "Performance Comparison of portable XRF Instruments."

Purchase of first SWIR/NIR instrument

**HHAG Established**

PXRFS establish sister company Healthy Homes and Gardens (HHAG) targeting the domestic markets.

**FEBRUARY  
BRUKER Partnership**

PXRFS becoming first Australian *Authorised Application Solution Centre*. Chris & Nigel are trained on all aspects of Bruker's spectral instrumentation.

This then expands into PXRFS earning distributorship of Bruker instruments, becoming the *Official Australian Sales Partner*.



**AUGUST  
Established**  
PAA establishes as a sales branch to PXRFS.

**PXRFS Custom Calibrations**

Chris creates standout custom calibration "Li Index" designed to target lithium for pXRF. This skillset evolved from training by Bruker and resulted in PXRFS offering matrix matched custom calibrations on Bruker instruments.

**OCTOBER  
Caesium Calibration**

Pioneer Resources engages PXRFS to develop a caesium calibration to capitalise on rare opportunity following their exploration period where caesium was intesected.

PXRFS acquire portable Raman system - the Bruker BRAVO Raman.

**JANUARY  
Sinclair Caesium Deposit Discovery**

PXRFS caesium calibration contributes to discovery of Sinclair Caesium Deposit.

This is an incredible discovery as there were previously only 3 caesium mines globally.

**Did You Know?**

The Bruker BRAVO Raman had a spin off project to the 2018 Deposit Scale Evaluatio to develop an onboard mineral library for the identification of LCT pegmatite minerals.

Initially this was based on data from Sinclair, which was then expanded by generous access to private and public mineral collections across Perth.

PXRFS acquire portable FTIR system - Bruker ALPHA II.

**AUGUST  
Deposit Scale Evalutation**

PXRFS staff spend roughly 3 months analysing 8000 drill hole samples and 2000 grade control samples from the Sinclair Deposit at the Pioneer Kalgoorlie base is carried out using Raman, FTIR, SWIR and pXRF technologies.

**JUNE  
Portable Raman & Discovery**

Pioneer Resources utilising PSS LCT pegmatite library on the portable Bruker BRAVO Raman, announcing discovery of spodumene at Cade in June 2019.

**MARCH  
PAA Absorbed into PXRFS**

PXRFS acquire the micro-XRF - Bruker M4 TORNADO.

**PSS Grows Online Presence**

PSS launch new website, YouTube channel Professor Spectrum. & Raman resource website georaman.com.

JUNE

MARCH

MAY

**NOVEMBER  
PSS acquire the Bruker M4 TORNADO PLUS.**

SEPTEMBER

**PSS Online Store Launched**

Clients can book in analytical and instrument related services such as training, hire out instruments & purchase accessories.

JULY

**PXRFS changes names to PSS**

Portable XRF Services changes name to Portable Spectral Services reflecting growth of spectral technology and services offered.

SEPTEMBER

**PSS Launches into Canadian market**