

# Engineering Vacation Practice Report

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**Name:** Josh Lancini  
**Student ID:** 131 797 20  
**Course:** Civil Engineering – 3<sup>rd</sup> Year  
**Employer:** Reay Services Group  
**Period:** 21 November 2017 to 22 December 2017

## 1.0 Executive Summary

From 21 November 2017 through to 22 December 2017, I completed my third period of vacation practice with Reay Services Group (RSG) in order to enhance my knowledge of the civil construction and engineering industries, and how they are both practised and managed in today's society. As a 3<sup>rd</sup> year student, I worked under the guidance of project managers, estimators and site supervisors at the firm and was given exposure to a range of activities being completed by the company for current projects and tenders. As a result, I gained a thorough understanding of the types of jobs and processes which RSG, and many other civil construction companies, undertake on a regular basis. During my time with RSG, I was primarily involved with the Collinsville Solar Farm Project, as well as completing a number of other tasks and duties for the company.

Some of the tasks performed throughout my placement included:

- An introduction to Reay Services Group
- Project supervising and reporting duties
- Site specific inductions
- Updating and compiling monthly payment claims
- Estimating works for tenders
- Sending RFQs and obtaining quotes
- Updating and optimising company registers and spreadsheets
- Developing company checklists, procedures and employee presentations
- Meeting exposure

The vacation practice undeniably proved to be an extremely insightful and valuable experience. The work allowed me to understand first hand some of the specific roles a project manager and estimator performs in the real world, in addition to the demands and lifestyle of an employee at a civil construction company. Going forward, I know that the knowledge I have gained from this experience will greatly assist me in both the remainder of my engineering degree as well as in everyday life.

2.0 Contents

- 1.0 Executive Summary ..... 2
- 2.0 Contents ..... 3
- 3.0 Introduction..... 4
- 4.0 Tasks and Duties Performed..... 5
  - 4.1 Introduction to Reay Services Group ..... 5
  - 4.2 Collinsville Solar Farm Project ..... 5
    - 4.2.1 On-site Supervising and Reporting..... 5
    - 4.2.2 Monthly Payment Claims ..... 6
    - 4.2.3 Managing Employees ..... 6
  - 4.3 Estimating Works ..... 6
  - 4.4 Optimisation and Development of Company Registers and Documents..... 7
  - 4.6 Meeting Exposure ..... 7
- 5.0 Experience Gained..... 8
- 6.0 Conclusion ..... 9

### 3.0 Introduction

Reay Services Group (RSG) is a locally owned and operated civil, mining and pipeline construction company founded in Mackay in 2004 by Managing Director Brett Reay. With over 35 staff employed by RSG today, the business has grown from humble roots to become the PE Pipeline Contractor of Choice across the Bowen, Galilee and Surat Basins. With a strong presence in the mining, gas and mineral processing industries, RSG has the capability to facilitate projects outside of their local Central Queensland region on an as-needed basis. Since their beginning, RSG has also expanded their range of services to include not only the supply, construction and installation of gas and water pipeline systems, but also a variety of other civil construction works including trenching, site earth works, and plant and labour hire. By working closely with clients, RSG builds their customer's trust and loyalty through the company's reliability, experienced staff, and their demonstrated ability to deliver high quality projects on time and on budget.

Throughout the Christmas holidays, I undertook a period of vacation practice with RSG in order to further develop my knowledge and understanding of engineering and construction management. Based at the company's Mackay office on 2/13 Wellington Street, Mackay City, I was exposed to projects from not only the office point of view, but the on-site aspect as well. The projects that I was associated with proved to be both interesting and challenging, with each job that I was given undeniably enhancing my knowledge of the aforementioned industries. Furthermore, my time on placement allowed me to develop an appreciation for how a civil mining and construction company is both run and operated.

## 4.0 Tasks and Duties Performed

### 4.1 Introduction to Reay Services Group

On my arrival at RSG, I was given the opportunity to meet the many staff within the office and learn about the different roles and responsibilities that each employee had. In addition, I was required to complete a standard company induction which involved learning about the regulations and policies that the company has in place, in particular the HSEQ protocols which the company strives to achieve.

After becoming familiar with how the company operated and the safety regulations in place (such as the appropriate PPE, or personal protective equipment), I was then required to complete site specific inductions for the projects which I would be involved with and visiting. More specifically, site specific inductions were completed for the Collinsville Solar Farm Project and the Central Highlands Regional Council Pipeline Upgrades – as will be further discussed.

### 4.2 Collinsville Solar Farm Project

#### 4.2.1 On-site Supervising and Reporting

The main project that I was involved with throughout my placement was the construction of a new 800-acre solar farm near Collinsville, QLD. Soon after starting with RSG, I was given a briefing of the job by our project manager in order to gain a comprehensive understanding of what was involved.

In my second week with the company, I was sent to Collinsville to work in the site office while the project supervisor was on leave. While on site, not only did I get the opportunity to witness first-hand some of the construction processes involved with developing a solar farm, but I was also responsible for many of the reporting duties that the supervisor would typically prepare. Some of these duties included: completing the Daily Reports for the project; preparing the Pre-Start / Toolbox Talk for the beginning of the day; and ensuring all workers have correctly completed all daily documentation (such as Take 5s, Plant Inspection Checks, Alcohol Breath Tests, and Timesheets). In addition, I was also required to collate this documentation on a daily basis and provide any relevant copies to the contracting company.

#### 4.2.2 Monthly Payment Claims

Another ongoing task while with RSG consisted of updating the company's progress claim spreadsheet for the Collinsville project. More specifically, I would input costs such as plant use, labour hours, and other variations on a daily basis to ensure that the claim was accurate and ready to submit by the monthly deadline. After submitting the payment claim to the contracting company, a new Microsoft Excel spreadsheet was carefully setup such that previous claim amounts, current claim amounts, and claim to date values were appropriately inputted, and any relevant formulas were correctly referencing the right cells.

#### 4.2.3 Managing Employees

While with RSG, I was in charge of managing a number of different requirements for our workers on the Collinsville site. In particular, I would consult with the team at Collinsville Real Estate to organise meals and accommodation for our personnel, and ensure that Collinsville Real Estate were aware of which workers we had in town on each day. This ensured that our employees were correctly receiving their meals when they were in Collinsville, and that their accommodation was being serviced when they were not. Furthermore, I also created the new roster to be used in January to accommodate for our reduced scope of works from this time, ensuring that we were optimising the limited staff that we had remaining.

Finally, I also acted as one of the primary points of contact between the RSG Mackay Office and the RSG Collinsville workers, particularly when located in the site office. As such, if our workers had any issues with a piece of plant – for example – I would assist in seeking for (or ordering) a spare part to be delivered in the shortest time possible to ensure minimal delay to the works.

#### 4.3 Estimating Works

One of the primary departments at RSG is their project and estimating team. While with the business, I supported the company's estimators in compiling the tender submission documents and coming up with a cost estimate for the works at hand. In general, the process starts with the company reviewing the request for tender (RFT) – often received through sites such as *PlantMiner*, an online construction marketplace for people to list, find and hire equipment and sub-contractors around Australia.

Following this, I assisted in obtaining quotes for the various plant, facilities and materials that may be required by sending requests for quotations (RFQs) to our suppliers. Furthermore, throughout the entire tender process I became proficient with the document control processes necessary to keep track of all relevant emails, quotes and other documentation.

#### 4.4 Optimisation and Development of Company Registers and Documents

Another task of mine at RSG involved not only developing new procedures and presentations for the company, but also updating and optimising existing company registers and spreadsheets. More specifically, I was tasked with restructuring a number of the business' registers in order to make them more clear, succinct and efficient to use. In addition, I developed guides for our project, tender and plant hire folders which workers could use to not only determine where to locate a specific document, but also where to file one. This allowed all employees to have the same understanding with regards to the company's document control and filing structure.

Furthermore, I produced a company procedure for our new plant hire sector, and gave a presentation to the staff so that they were aware of the process involved. To add to this, I also developed other presentations for our site workers regarding certain procedures, as well as checklists, templates and rates spreadsheets for various works.

#### 4.6 Meeting Exposure

Being part of the RSG team meant that I had the privilege of attending a range of meetings throughout my placement. Weekly staff meetings were held with those employees based in the Mackay office to discuss areas such as administration, HR and training, operations and business development just to name a few. Furthermore, I was also fortunate enough to meet with our sub-contractors completing the concreting works for our job with the Central Highlands Regional Council. Meeting with these sub-contractors gave me an insight into the types of discussions that occur between the two parties, as well as how to discuss any matters professionally with them.

## 5.0 Experience Gained

Throughout my placement with RSG I was lucky enough to be involved in various aspects and features of civil construction and engineering life. By being involved first hand in projects, I was able to gain a deeper understanding of the knowledge behind construction management and project estimating in a productive and professional environment.

By working on real projects, I was able to see exactly how the knowledge learnt at University is transferred through to the workforce and how essential it is. Moreover, by being given the opportunity to use spreadsheets and other computer programs, it became clear how technology can be such a powerful tool in the workplace. In particular, after being exposed to the online construction marketplace site *PlantMiner*, it is clear that platforms such as these can significantly improve the efficiency of the tendering process, saving both time and money for the company. Furthermore, I found going on-site to be an extremely beneficial learning tool, with the unique hands-on experience allowing you to see how a project evolves from a drawing on paper to the physical works. On-site visits also provided me with a far greater understanding of the many features associated with civil construction projects by allowing me to physically see the works upfront and close.

However, not only did I gain a thorough understanding of many construction management and engineering duties, but just as importantly learnt how project managers and estimators work within a construction company. More specifically, the ability to work as part of a team, communicate well, demonstrate social skills, meet deadlines, and finally be neat, punctual and reliable are all crucial attributes associated with working in this industry.

Developing on this, it became clear that other essential requirements for successful business' such as RSG include: having positive relationships with clients; ensuring projects are delivered on time and to a high quality; creating a sense of community amongst the employees; providing a safe working environment; managing workers to be productive and efficient; and finally abiding by all rules and regulations such as Australian Standards and Workplace Health and Safety laws.

## 6.0 Conclusion

Throughout my period of vacation practice with RSG I have been fortunate enough to have gained a vast amount of practical knowledge surrounding the construction and project management industries. Moreover, I have developed a far greater understanding of the types of projects undertaken in the workforce, as well as the demands of being an employee at a civil construction company. Moving forward, I have no doubt that the knowledge and practical experience which I have drawn from this vacation practice will be extremely beneficial in not only the remainder of my engineering degree, but in everyday life.

I would like to thank Reay Services Group and all of its employees for providing me with this incredible opportunity over the past five weeks. In particular, I would like to express gratitude to my supervisors Lisa Jamieson, Marybelle Barrios, and Russell Leggatt for providing me with guidance and assistance as required and for allowing me this enjoyable experience.