



## TECHNICAL MEMORANDUM

**DATE** February 27, 2026

**TO** Environmental Manager, Peter Strow  
Coeur Alaska

**CC** Raul Rodriguez, Ryan Sibley

**FROM** Paul Pigeon, Vice President-Water Treatment

**Reference No.** 31405631.1516-006-TM-0

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### NITROGEN SOURCE CONTROL OUTFALL 002 – TASK 2 IMPLEMENTATION AND EVALUATION

This memorandum reports on the results of Task 2 of the Source Control program for reduction of nitrogen compounds – ammonia and nitrate – in mine water outfall 002 at the Kensington Mine.

#### 1.0 SCOPE AND OBJECTIVES

Coeur Alaska, Inc. (CoeurAK) is subject to a Compliance Schedule for Outfall 002 – Ammonia and Nitrate Monthly Average Limits in Section 2.4 of the Kensington Mine Alaska Pollutant Discharge Elimination System (APDES) permit No. AK0050571. The permit requires completion of the first three tasks in Table 8 of the permit to develop a compliance plan for the ammonia and nitrate limits using source control rather than treatment, 20 months from the permit effective date of August 1, 2024. Tasks 1 and 2 are presented below. Task 3 – Select Source and/or Treatment Methods, will be brought into focus based on the results reported in this memorandum.

#### 1.1 Task 1 Source Control and Characterization

Task 1 focused on blasting agents as the source of nitrogen compounds, the Paste Plant as a sink and the water balance leading to discharge from the tailings treatment facility (TTF) decant water treatment plant (WTP) at Outfall 002. Task 1 involved completion of several subtasks leading to identification of three source control areas for implementation and evaluation in Task 2:

- Analysis of concentrations of ammonia and nitrate and collection and analysis of flows in the Mill, Paste Plant and TTF WTP to develop pollutant mass terms.
- Identify options for potentially reducing ammonia and nitrate loadings/concentrations in the TTF WTP effluent (Outfall 002) by reduction of source loadings via reduction of ore wash-off in the Mill, decreasing nitrogen compounds in Mill feed water through potential use of low nitrogen source waters while increasing TTF WTP discharge flow rates, and/or increasing the sink term for nitrogen compounds in tailings water used in the Paste Plant.
- Analyze the effectiveness of various source control options and recommend actions to be implemented and evaluated in Task 2.
  - Reduce ore wash-off source term by making blasting improvements.

- Use a low-nitrogen Mill feed water source in place of recycled TTF decant and increase TTF WTP discharge at 002.
- Restart Paste Plant reverse osmosis (RO) plant and increase the paste sink term by use of RO brine in the paste mix.

## 1.2 Task 2 Implementation and Evaluation Scope

The scope of Task 2 is focused on the Mill process ore wash-off source of ammonia and nitrate into the Mill/TTF water system and 002 Outfall. A series of tasks have been completed during 2025, including:

- Additional Data Acquisition on Ore Wash-Off Current Condition:
  - Additional Mill water sampling and analysis to combine with Task 1 data collection and define baseline ore wash-off source term.
  - Blasting products and practices audit to identify potential changes that may reduce contamination of ore with nitrogen compounds, ammonia and nitrate, with an audit results memorandum (Attachment 1).
- Ore Wash-Off Source Control Implementation and Evaluation:
  - Collaboration on Changes to Blasting Practices.
  - Mill water sampling and analysis for evaluation of the extent to which source term reduction has been achieved.
- Task 2 Memorandum:
  - Present results, conclusions and discussion of whether source control achieves reductions in ammonia and nitrate to comply with Outfall 002 limits.
  - Compliance Schedule Path Forward.

During Task 2, CoeurAK also took action on the other recommended source control projects identified in Task 1:

- Initiated usage of Jualin tunnel drainage as a low-nitrogen Mill feed water source in place of recycled TTF decant. Jualin water was also fed to the TTF WTP.
- Paste RO restarted, with RO brine used in paste mix.

These actions may also have contributed to reduction of ammonia and nitrate in the Outfall 002, which is discussed in this report in the context of source control achieved by reducing the ore wash-off source term. Their effects on ammonia and nitrate at Outfall 002 are discussed further in the body of the annual Kensington water quality/compliance report.

## 2.0 BLASTING AUDIT AND PRACTICE CHANGES

WSP performed a site visit July 22-28, 2025, for explosives data acquisition. WSP submitted a technical memorandum on August 8, 2025 that detailed the audit and blasting change recommendations. This memo is included as Attachment 1. The data acquisition was part of the overarching audit of the practices and performance of blasting at Kensington that WSP completed. The audit focused on three key performance aspects of the drill-and-blast (D&B) sequence that had the potential to affect the outfall constituents: explosive products, drilling

accuracy, and blast results. As part of the audit, WSP held formal meetings with lead personnel regarding the standard operating procedures for D&B, historical results, and major changes. Additionally, WSP informally interviewed crew members regarding the same topics.

WSP tested explosive products through quantitative and qualitative data collection. WSP inspected the explosive products at the time of loading and at their storage locations. The only major issue found was emulsion at the point of loading. However, this was attributed to malfunctioning bulk truck systems and was not indicative of inherent product issues. There were no major issues attributed to storage conditions or inventory management. Quantitative data collection revolved around Velocity of Detonation (VOD) monitoring of holes. The collected data indicated VOD performance within an acceptable tolerance of the manufacturer specifications.

Drilling performance was inspected for both development and stope blast designs. Development blast designs utilized short parallel hole methodology and therefore collar location was predominantly considered for drilling precision; no major issues were found. Relative collar location and downhole deviation were inspected and considered for stope blasts. Relative collar location was found to be consistent for typical blasts and no major concerns were found. Stopes for which dump-ring methodology was implemented were inspected and relative collar location was significantly less consistent in these scenarios. These deviations, when considered in a worst case scenario, can cause unintended interaction of the explosive pressures that may inhibit ideal detonations. The occurrence of non-ideal detonations will cause higher amounts of ammonia and nitrate residuals to be present on the ore.

Blast performance was inspected quantitatively due to limitations of shot access for safety reasons. Stope blasts were consistently found to have undetonated explosives present post-blast. These observations were most noted in the first rings and particularly when dump rings were implemented. Additionally, there were indications of deadpressing near the toe of blastholes that caused explosives wastage. WSP inspected many development blasts and noted the most common cause for poor performance was when significant water was present. In addition to the presence of water, WSP observed multiple other implementation caused explosive wastages: explosive spillage, overloading of collar pipe, and cleaning out the loading hose (after loading of a development heading was complete) onto the ground or into the relief hole. All of these instances have no opportunity to detonate and therefore directly contribute to explosives wastage.

WSP produced the following recommendations for blasting improvement:

- Stoping Recommendations:
  - Limit decreasing ring-to-ring distance or minimize usage of dump rings entirely.
  - Decrease the inclination of blastholes along the footwall.
  - Increase the bottom of hole offset from the hanging wall.
  - Limit the effect of water pressure in holes.
- Development Recommendations:
  - Priming and cleaning of the hose alternatives at the end of loading events.
  - Prevent overloading floor holes or holes with collar pipe.

- Limit the effect of water pressure in holes.

These recommendations are discussed in detail in Attachment 1. WSP held a series of follow-up meetings with CoeurAK to discuss the implementation of these recommendations. During the first meeting, on September 18, 2025, CoeurAK stated the following:

- Stopping recommendations were yet to be implemented in the field, due to the delay between design and blasting:
  - The inclination and offset recommendations had been implemented in design practices.
  - Dump ring alterations were planned for design implementation in early October 2025.
  - Weep holes for up-stopes was standard practice already.
- Development recommendations were being mostly implemented:
  - Cleaning of hose at end of loading had been started in final holes with any remainder emptied into a bucket and detonated with stope blasts.
  - Crew members had been instructed to pull collar pipe when a hole was ready to be loaded and observations indicated this was being completed occasionally, but not consistently.
  - At least one driller had begun drilling weep holes, but this was not yet a consistent practice.
- Bulk truck system malfunctions were still consistently happening.

During the second meeting, on November 12, 2025, CoeurAK stated the following:

- Stopping recommendations were implemented in field:
  - Offset had increased from 3-feet to 5-feet.
  - Inclination had yet to be field implemented.
  - Dump rings were eliminated entirely with the exception of one equidistant ring spacing stope blast.
- Development recommendations were being mostly implemented:
  - Changes to hose clean-out procedures had not been consistently implemented.
  - No collar pipes filled with emulsion had been found post-blast, indicating proper procedure implementation.
  - Weep hole drilling had become a more consistent practice when encountering water.
- Bulk truck system malfunctions were minimal.

During the third meeting, on January 15, 2025, CoeurAK stated the following:

- Stopping recommendations were implemented.
- Development recommendations were implemented.

- Bulk truck system malfunctions had been fully repaired.
- Mill water samples collected in December 2025 were not reflective of the implemented blasting changes.
- Material processed in the mill during this sampling campaign was from stopes and developments blasted prior to implementation of any of the improvement recommendations.

WSP expects that with the continued implementation of these recommendations, nitrogen compounds in Mill water will decrease.

### 3.0 WATER QUALITY AND LOADING

Table 1 summarizes ammonia concentrations from three locations before and after the blasting changes described in Section 2. Post-blasting changes data is limited to two sampling events. The results, collected between June 2025 and January 2026, are reported as minimum, average, and maximum values.

As shown in Table 1, the average ammonia concentration decreased significantly post blasting change at the Mill Feed, but the reduction in ammonia concentration through the tails thickener was minimal.

**Table 1: Ammonia Concentrations Summary**

Summary Ammonia Concentrations				
Time Period	Location	Min (mg/L)	Average (mg/L)	Max (mg/L)
Pre-Blasting Change	Mill Feed	0.07	9.95	23.2
	Tails Thickener U/F	10.6	17.4	26.6
	Tails Thickener O/F	10.7	17.7	27.1
Post Blasting Change	Mill Feed	0.75	0.97	1.12
	Tails Thickener U/F	9.7	13.9	18.4
	Tails Thickener O/F	9.6	13.9	18.3

Similarly, Table 2 is a summary of the nitrate and nitrite concentrations seen during the same sampling period. The same analysis is shown due to the range of data collected from sampling. Due to the smaller range of concentrations, the analysis of nitrite was limited to an average of concentrations.

Table 2 indicates a similar trend for nitrate with a reduction in the average concentration from the Mill Feed, but only slight decreases are shown in the tails thickener underflow and overflow following the blasting changes. This pattern remains the same for average nitrite concentrations as well.

**Table 2: Nitrate and Average Nitrite Concentration Summary**

Nitrate and Nitrite Concentrations					
Time Period	Location	Min NO <sub>3</sub> (mg/L)	Avg NO <sub>3</sub> (mg/L)	Max NO <sub>3</sub> (mg/L)	Avg NO <sub>2</sub> (mg/L)
Pre-Blasting Change	Mill Feed	12.5	27.0	51.7	0.56
	Tails Thickener U/F	35.6	49.1	62.2	0.62
	Tails Thickener O/F	36.2	49.3	61.4	0.62
Post Blasting Change	Mill Feed	12.1	12.8	13.3	0.03
	Tails Thickener U/F	28.2	40.8	52.2	0.32
	Tails Thickener O/F	29.3	41.6	53.4	0.46

A summary of the ammonia and nitrate plus nitrite loadings added to the Mill/TTF water system by ore wash-off in the Mill is presented in Table 3. The minimum, average, and maximum loadings are displayed to show the range of data collected over the sampling period.

Based on the data shown in Table 3, there is an apparent increased loading shown for ammonia and nitrate and nitrite in the water. This trend is based on only three post-blasting changes samples collected in late January and February 2026. Notably, a sample collected on 2/19/2026 was not used in the calculations as it contained unexplainable or anomalous data.

**Table 3: Summary Ammonia and Combined Nitrate and Nitrite Loadings**

Time Period	Parameter	Min Loading (kg/day)	Average Loading (kg/day)	Max Loading (kg/day)
Pre-Blasting Change	Ammonia	7.8	17.5	36.1
	Nitrate+Nitrite	14.1	46.3	101.0
Post Blasting Change	Ammonia	17.4	26.7	36.4
	Nitrate+Nitrite	36.1	60.5	84.5

Attachment 2 contains all the ammonia, nitrate and nitrite data collected in December 2024 through February 2026. The data set includes flows of Mill feed water provided by Coeur Alaska for the sampling dates.

## 4.0 OTHER ACTIONS

The Task 1 Source Control Technical Memorandum, January 30, 2025 (“Source Control for Ammonia and Nitrate at TTF WTP, Outfall 002”), recommended the implementation of source control measures in two additional areas of the Mill/TTF water system:

- Increase TTF WTP treatment and effluent discharge flow rate at Outfall 002, together with changing the Mill feed makeup water source from TTF decant reclaim to a low nitrogen stream. At the Mill, the change was that 250 gpm of TTF decant reclaim used as Mill feed makeup was replaced with Jualin portal water at 250 gpm. The other change that was implemented included rerouting of excess Jualin portal water to the TTF WTP for treatment and discharge. These uses of Jualin portal water began in June 2025. A flows data set was provided showing the uses of Jualin water for Mill feed makeup and rerouting to the TTF WTP.. Based on the

information provided, it appears that total flow at the Jualin portal is not always adequate to serve this use. Another low nitrogen source may need to be routed to the Mill feed use point to supplement the Jualin water and attain the benefits expected and needed for reducing concentrations of ammonia and nitrate and achieving consistent compliance with permit limits.

- A reverse osmosis (RO) system with an ultrafiltration (UF) unit as pretreatment had been installed previously on filtrate from tailings disc filters at the Paste plant, with RO brine used in the paste mixers to sequester sulfate in the paste backfill and reduce sulfate in water returned to the Mill/TTF loop and Outfall 002. Several years passed in which other factors and actions combined to make the Paste plant RO unnecessary for sulfate control and it stayed out of operation. In Task 1, a re-start of the RO and its possible expansion were recommended for sequestering of ammonia and nitrate in paste backfill. In Q2 of 2025, a project was initiated to re-start the RO system with improved pretreatment to handle disc filters filtrate feed that had higher than expected suspended solids during the earlier operating period. It is not known if or when the actual restart of the RO occurred.

Monitoring and assessment of the individual success of these two actions were not part of the work reported here. The Kensington annual water quality report includes discussion of the actions identified above.

The overall effect of these source control measures should be reflected in the concentrations of ammonia and nitrate at Outfall 002, Figures 1 and 2 show the monitored concentrations of ammonia and nitrate at Outfall 002 for all of 2025 and January of 2026. Rerouting of Jualin water for treatment and discharge at the TTF WTP started in June 2025 (as shown in Attachment 3). For the periods of late December 2024 through May 2025 compared with July 2025 through January 2026, a reversal of an upward trend in ammonia concentrations was achieved and ammonia concentrations remained at approximately 3 mg/L as N for the second half of 2025 (Figure 1). However, there do not appear to be significant reductions in discharge concentrations of nitrate (Figure 2).

A closer look at total flow at the Jualin portal shows fluctuations in available low nitrogen water for Mill supply and TTF WTP treatment and discharge such that other water sources may have had to be used to supplement or replace the Jualin water at the Mill intermittently. This may explain why wide ranges of Mill feed concentrations of ammonia and nitrate were shown in the pre-blasting changes period, which included samplings both before and after the start of Jualin water use. Also, the lack of changes in discharge concentrations of nitrate at Outfall 002 suggest that Jualin portal water may not have always been rerouted to the TTF WTP.

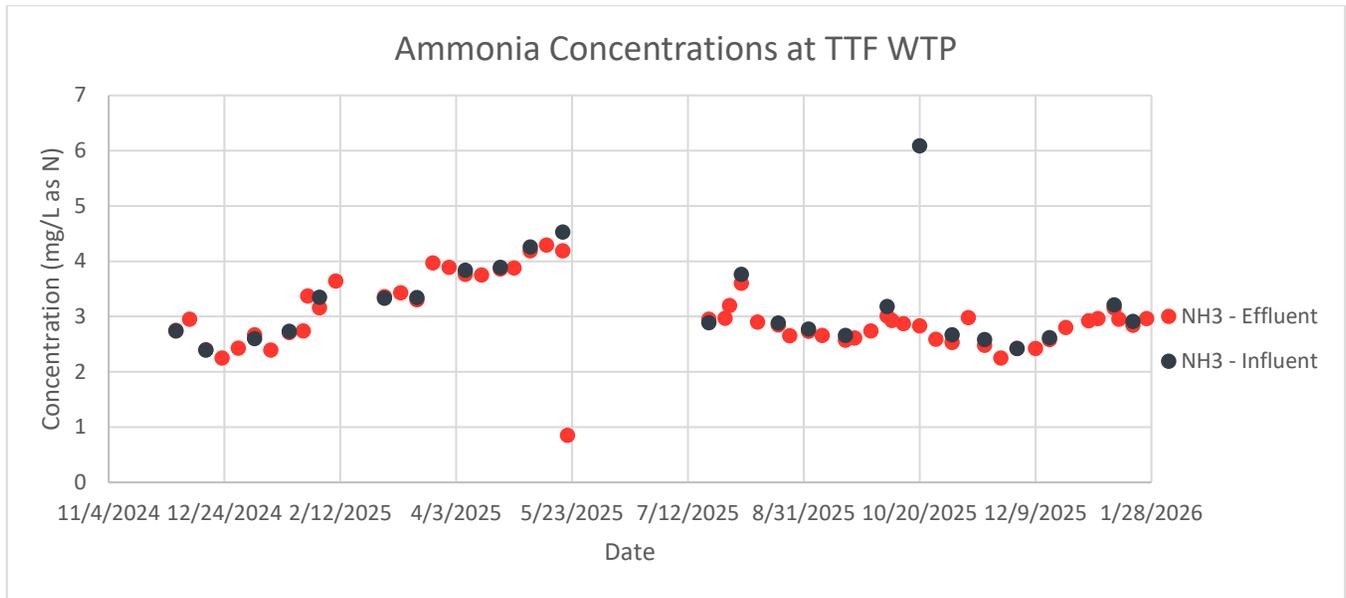


Figure 1: Concentration of Ammonia (mg/L as N) at the Influent of the TTF and at the Outfall 002 (effluent)

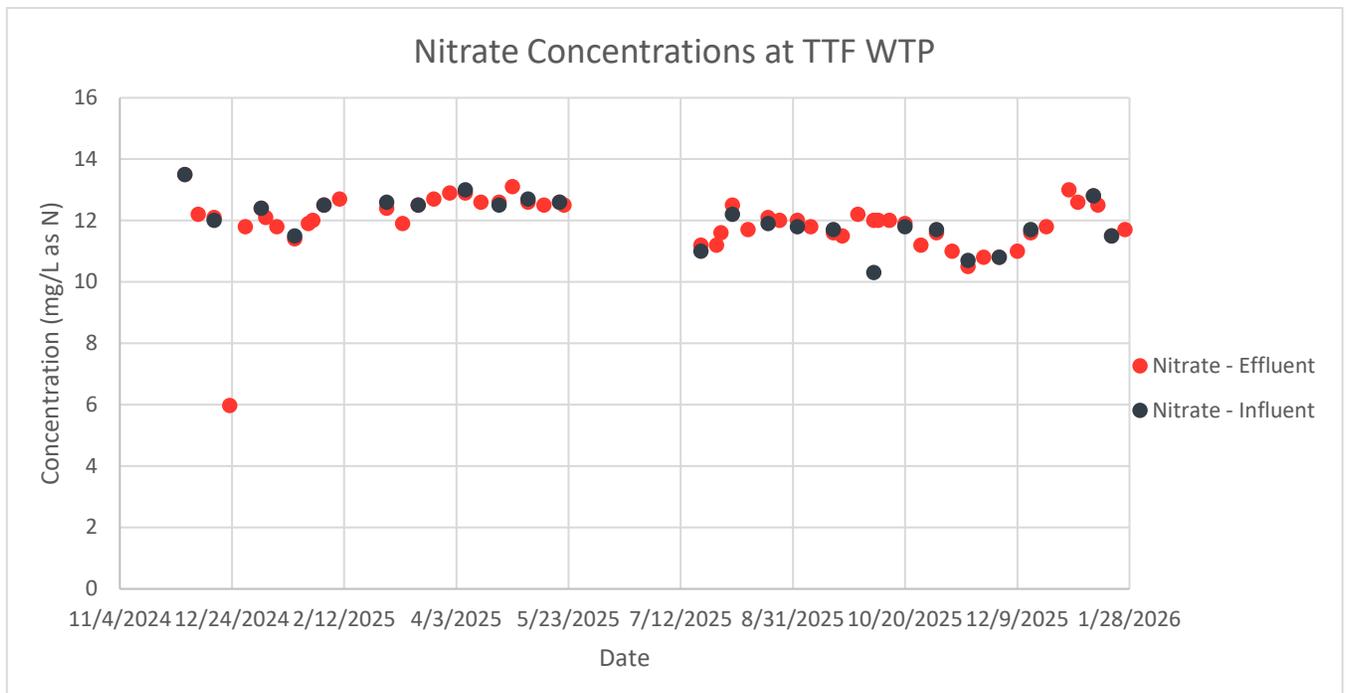


Figure 2: Concentration of Nitrate (mg/L as N) at the Influent of the TTF and at the Outfall 002 (effluent)

## 5.0 SOURCE CONTROL EVALUATION

Reductions in loadings of ammonia and nitrate added to the Mill/TTF water system by ore wash-off in the milling process do not appear to have occurred as a result of changes in blasting practices. This is based on only three post-blasting sample sets at the Mill, which showed higher loadings than in the pre-blasting changes period. More data collection should occur at times when there is certainty that ore being processed in the Mill was mined after implementation of blasting practice changes; and, that Mill makeup water is being supplied solely by Jualin portal water.

Reductions in concentrations of ammonia and nitrate associated with the use of low nitrogen Jualin portal water, as discussed in section 4.0, needs further evaluation in conjunction with more sampling of the Mill process water, as Mill feed nitrate results do not appear to be correct when Jualin water is the sole makeup source for Mill feed. When doing the additional samplings of Mill feed, tails thickener underflow and tails thickener overflow, the following additional information will be needed for the sampling day:

- mill feed makeup source(s) and flow rate(s)
- ore source, whether from stockpile or current run-of-mine

The Jualin portal source for low nitrogen water to Mill feed needs further evaluation. The total available flow that can be used for this purpose needs to be known, as well as whether delivery of the Jualin water first to the Mill (with the remainder to the TTF WTP) is limited by pumping and/or pipeline capacities. The actual flow rate of Jualin water to the Mill process tank needs to be metered and recorded, as does the flow rate to the TTF WTP. Additional data sets for ammonia and nitrate in the Jualin portal water should be collected and reviewed to assess whether concentrations remain low.

Assuming that the RO unit in the Paste plant is operational, the flow rates of the UF feed, RO feed, RO permeate and RO brine streams should be metered and recorded. Also, a means of metering and recording the flow rate and/or volume of RO brine being used in the paste mix and the flow rate or volume returned to the tailings circuit are needed. Samplings of the UF feed, RO brine and RO permeate are needed to determine the separation efficiencies for ammonia and nitrate in the RO system.

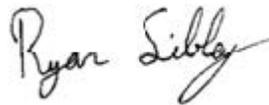
The above-described additional source control data collection efforts and evaluations may not yield favorable results for using source control to ensure compliance with monthly average ammonia and nitrate limits. If limited reductions in loading at the Mill are shown and/or the Paste plant RO system is shown to be sequestering significant loadings of ammonia and nitrate, then modeling should be conducted to assess if and how quickly these incremental changes can achieve compliance. The TTF WTP as currently configured should be assessed by Coeur Alaska to determine if an increase in influent flow of tailings decant and discharge flow rate can be achieved in compliance with permit limits to increase the rate of disposal of ammonia and nitrate. An initial assessment of treatment for removal of ammonia and nitrate should be conducted, with the following objectives:

- Identify a location or locations in the Mill/TTF water system where treatment should be applied and characterize the flow rate range and water quality that would have to be treated.
- Assess technologies that would be effective in treating for ammonia and nitrate, as well as pretreatment and post-treatment technologies given the water quality.
- Prepare initial, high-level cost estimates for installation and operation of ammonia and nitrate treatments.

By the third quarter of 2026, a final determination will be needed on whether source control will be used or treatment for ammonia and nitrate will be needed for compliance with monthly average effluent limits when the compliance schedule ends in January 2029.



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Attachments: Attachment 1 – Explosives Data Acquisition Technical Memorandum  
Attachment 2 – Mill Process Water Quality and Flow  
Attachment 3 – Jualin Portal Water Flow

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**ATTACHMENT 1**

**Explosives Data Acquisition  
Technical Memorandum**



## TECHNICAL MEMORANDUM

**DATE** August 18, 2025

**Project No.** 31405631.1516-005-TM-Rev0

**TO** Pete Strow, Environmental Manager  
Coeur Alaska, Kensington Mine

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Nathan Rouse and Gabriel Milliron - Thoroughbred Drill and Blast Consultants

**FROM** Ryan Sibley

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### NITROGEN SOURCE CONTROL OUTFALL 002 – TASK 2 EXPLOSIVES DATA ACQUISITION

## 1.0 INTRODUCTION

Coeur Alaska, Inc. (CoeurAK), operates the Kensington Mine (Kensington), which targets a gold-bearing deposit near Juneau, AK (the 'Project'). WSP USA Inc. (WSP), was requested to audit drilling and blasting operations and provide procedural and design recommendations in an effort of Ammonia and Nitrate reduction. WSP found no singular issue that is causing significant wastage, rather multiple issues contribute to the excessive Ammonia and Nitrate concentrations. These include drilling deviation, water presence, and housekeeping. The data, quantitative and qualitative, collected during the blasting audit and procedural and design recommendations are outlined in this Technical Memorandum (TM).

## 1.1 Background

CoeurAK monitors Ammonia and Nitrate concentrations at the Tailings Treatment Facility (TTF) Water Treatment Plant (WTP) Outfall. These readings have exceeded permitted limits and is the reason for a review of drilling and blasting procedures at Kensington. Preliminary monitoring at Kensington Mill indicated that ammonia and nitrate in Task 1 of the Nitrogen Source Control project showed that ore wash-off in the Mill is a source of ammonia and nitrate addition to the Mill-TTF water circuit and the WTP. CoeurAK did not detail specific issues with drilling and blasting performance and requested a comprehensive review of the procedures. CoeurAK requested that any recommended improvements be considered without causing drastic changes to existing operations – cycle times, fragmentation, and volume blasted – or inventory. The objective of the audit is to identify improvements that will reduce the ore wash-off source term.

Prior to arriving on Site, CoeurAK provided product information, blasting plans, best practices, equipment information, and drillhole deviation data. WSP completed a comprehensive review of this information and developed a hierarchical plan for the audit. This plan consisted of a top-down review of Site operations based on the items deemed to be most likely contributing to explosives wastage. The wastage types that were to be possibly encountered are direct use wastage, improper implementation wastage, design caused wastage, and product failure wastage. Direct use wastage is defined as any product that is spilled or left outside of boreholes, therefore, incapable of ever achieving detonation. Improper implementation wastage is defined as any product that is not being utilized as intended by the manufacturer or the design and is consequently causing incomplete

detonation to occur. Design caused wastage is defined as any flaws in design that could cause detonation failures or column displacement. Product failure wastage is defined as a failure of the product to function – detonate – as intended by the manufacturer. The documents provided indicated that direct use and design caused wastage were the most likely contributors to the high Ammonia and Nitrates in the mined ore, which is a source term for the TTF WTP Outfall. WSP placed high importance on data collection and observation to include shot loading and borehole deviation. The other wastage causes, improper implementation and product failure, were planned to be observed for causation while on Site as well.

## 2.0 BLASTING AUDIT

This TM serves as the main deliverable for blasting related aspects of Task 2. The audit was focused on observation of three key performance aspects of the drill-and-blast sequence:

- Explosives Products
- Drilling Accuracy
- Blast Results.

While on Site, WSP personnel held several informal interviews with various crew members that were a part of the drill and blast process. Drill operators, powdermen, shift supervisors, and engineers were the primary targets of these discussions. The insight from Coeur personnel helped guide the audit by further informing WSP of existing drill-and-blast procedures, the implementation of such procedures, and any changes observed in the previous months.

There is evidence of direct use wastage and design caused wastage in development and stope blasting applications. These factors can contribute directly to the excessive Ammonia and Nitrate present on the mining ore and draining from the Mill in tailings to the TTF and WTP Outfall.

### 2.1 Explosive Performance

The Kensington Mine utilizes a variety of explosive products for blasting. Titan 7000 bulk emulsion is the primary source for ammonia and nitrate on Site.. The product, when detonating in ideal conditions, should not have Ammonia or Nitrate as a byproduct of detonation. However, there are many factors that affect the detonation of any explosive product, such as, charge geometry, water conditions, and homogeneity of the mixture, amongst others. Explosives performance was measured using velocity of detonation (VOD) to test the performance of the product, with the full reports of VOD testing are included in Attachment 3. The following is an overview of the VOD information obtained during two blasts, a stope and development shot:

- Stope Shot K1555-083 – Aught Hole – July 24, 2025 – VOD reading of 5,575 m/s
- Development shot 2125-102 – Aught Hole – July 27, 2025 – VOD reading of 5,425 m/s

The Technical Data Sheet (TDS) provided in Attachment 1 states that the VOD should be 5,500 m/s. The collected data is within a reasonable tolerance of the intended VOD therefore indicating the explosives are performing as expected. This data supports the fact that explosive performance is a low contributor to wastage.

Complementary to the numeric VOD data collected, WSP observed the storage conditions of the emulsion as a qualitative comparison. The emulsion was stored in an appropriate steel tank. The intake access was on the top of the tank and was sealed with a steel cable indicating that the tank had not been tampered with since filling.

WSP, under supervision of and with approval from Kensington personnel, cut the cable and opened the tank to observe the storage conditions of the emulsion. Figure 2.1 shows deteriorated explosive on the lid of the bulk tank.



**Figure 2.1. Deteriorated Explosive on Bulk Tank Lid**

The deterioration is indicated by the discoloration – yellowy-white rather than pink – and crystallization on the surface of the material. The signs of deteriorated explosive were limited to the lid of the bulk tank. The explosive in the bulk matrix in the tank had the appropriate consistency, surface tension, color, and showed no signs of crystallization<sup>1</sup>. Figure 2.2 shows the emulsion inside the bulk storage tank and there are no indications of improper storage or deterioration.



**Figure 2.2. Homogenous Mixture in Bulk Tank**

WSP also inspected the storage of the cartridge product that was stored on Site and discussed it with Kensington blasting personnel regarding inventory methods. Kensington blasting personnel stated that they use First In, First Out (FIFO) inventory methodology. During the inspection, WSP noted appropriate storage and no indication of packaging deterioration. However, there were some lapses in the FIFO inventory system. There was product with

<sup>1</sup> These were all qualitative observations and are not bound by any physical or chemical testing of the above qualities.

manufacturer date codes as old as two years. Extended storage could lead to cartridge product wastage by detonation failure.

## 2.2 Drilling Performance

Drilling performance was determined based on two aspects: rough measurements of relative collar locations and downhole deviation measurements. WSP staff, when available and safe to do so during inspections, completed rough measurements of the relative collar locations. WSP found no significant deviations in the relative collar locations. The collar locations were consistent, as displayed in Figure 2.3.



**Figure 2.3. Development Heading Drillhole Layout**

The consistency of relative collar location was also apparent in most stoping applications. There was collar deviation found when there were multiple rings placed at the development face and angled away from the slot. The intra-row collars were designed to be within 1 foot (ft) of the adjacent row and the collars were found to be between 0.5 and 2 ft apart. Field conditions limited the ability to accurately drill these holes at the designed collar locations.

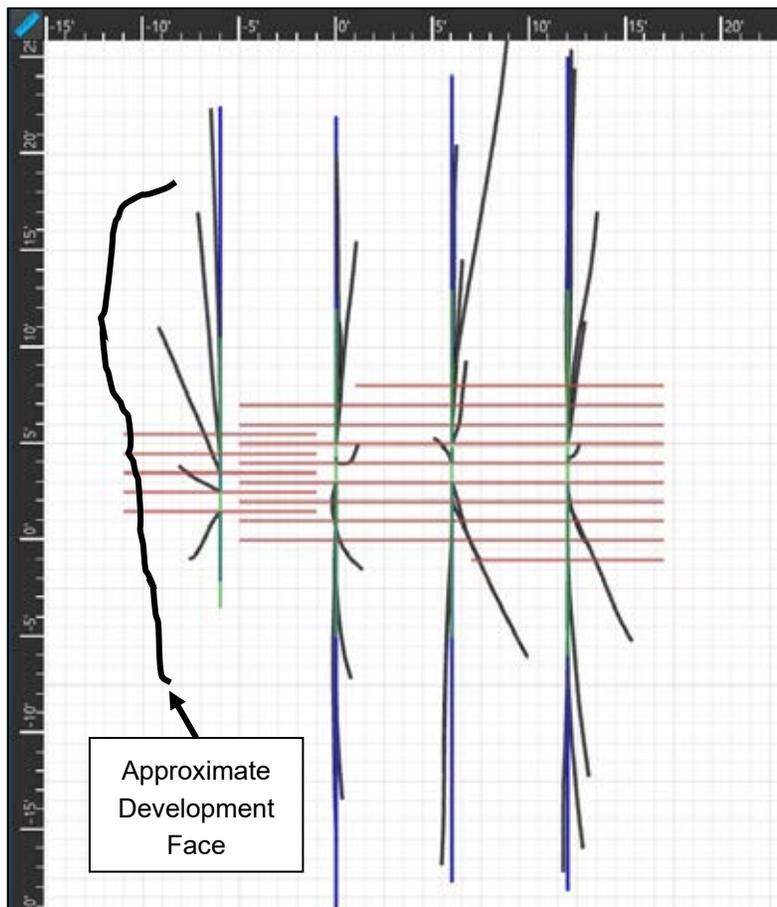
Downhole deviation was measured using a Carlson Boretrak 2 Advanced © borehole deviation device to collect data for the as-drilled holes and determine whether deviation was a possible source of improper explosives performance during detonation. Deviation collection was completed with the assumption of accurate hole collar locations. The collected as-drilled deviation data was then analyzed and compared to the design. WSP personnel conducted a downhole drill deviation survey for two stopes: EL1240-159 and 2345-262. The survey of EL1240-159 measured 10 holes in the slot. The survey of 2345-262 measured rings 1–4, a total of 33 holes. There was one outlier – Ring 4 Hole 9 deviated 4.56 ft – of the 43 total measured holes. WSP measured this hole twice to confirm there was no measurement error and the secondary deployment readings were nearly identical to the initial deployment data. There was highly variable deviation in the drillhole azimuth. The measured holes between both stopes displayed similar inclination deviation with respect to the direction of deviation. All holes deviated in the direction of the hanging wall. The magnitude of deviation displayed a direct correlation to the design inclination, i.e. a shallower inclination with respect to the hanging wall was more likely to have higher deviation. An overview of the deviation is shown in Table 2.1.

**Table 2.1. Drilling Deviation**

Location	Average Inclination Deviation (Degrees)		Average Azimuth Deviation (Degrees)	Average Toe Displacement (Feet)	Number of Holes Measured
	Toe	Set-up			
EL1240-159	2.41	0.91	4.04	3.17	10
2345-262	1.99	1.00	16.79	1.79	33
<b>Total</b>	<b>2.09</b>	<b>0.98</b>	<b>13.83</b>	<b>2.11</b>	<b>43</b>

Azimuth deviation varied much higher in stope 2345-262. The data was visually inspected and the deviation in Ring 1 varies from that in Rings 2–4. This variation in azimuth deviation direction is attributed to the development face location limiting set-up capability, i.e. field conditions constraining appropriate collaring procedures. The deviation of azimuth is displayed based on a top-down view of 2345-262 in Figure 2.4 and the annotations are:

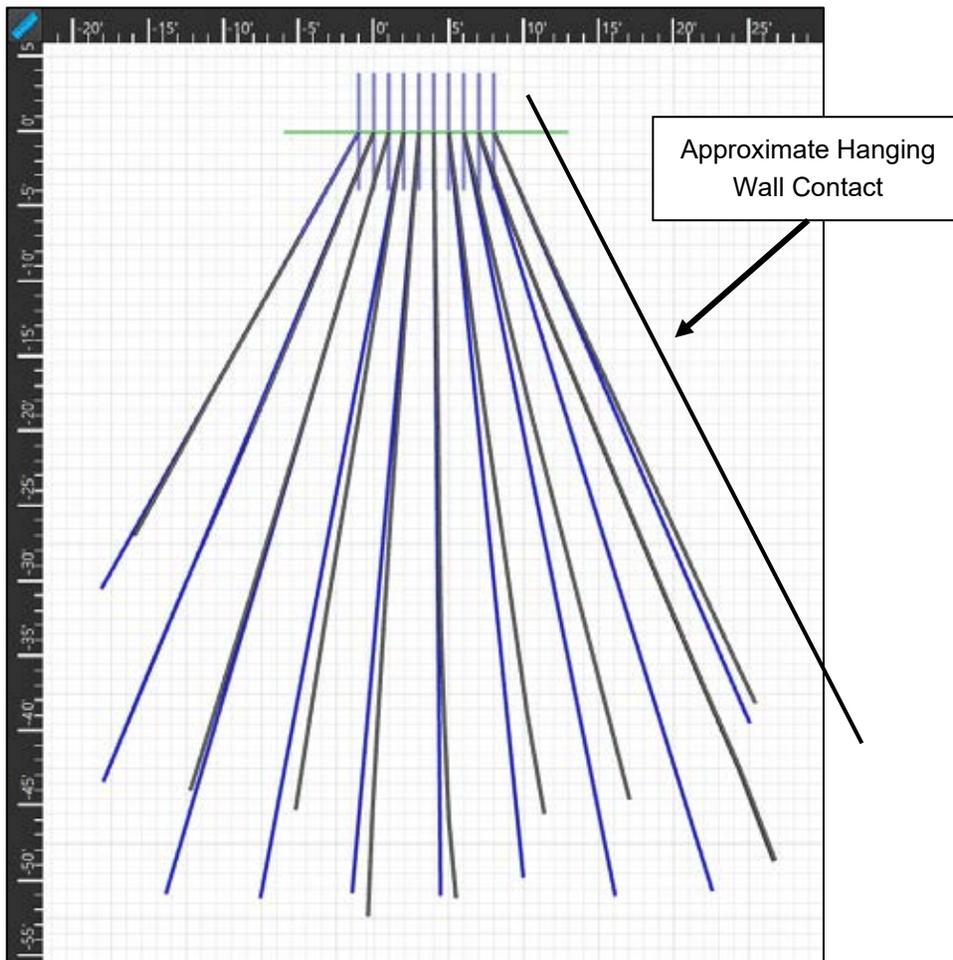
- Red Lines – Collar location
- Black Lines – As-drilled hole
- Blue Lines – Designed hole



**Figure 2.4. 2345-262 Azimuth Deviation Plan View**

Inclination variation was consistent between the two measured stopes including, as mentioned above, the tendency of deviation away from the footwall. Figure 2.5 displays a cross-section of Ring 4 looking in the direction of Rings 1–3 and the annotations are:

- Green Lines – Collar location
- Black Lines – As-drilled hole
- Blue Lines – Designed hole



**Figure 2.5. 2345-262 Ring 4 Deviation Cross Section**

The deviation is near zero in Holes 1–3 and increases in the direction of the hanging wall. WSP notes that the bottom of hole location is not well documented. All holes were truncated to a measurement above full depth to account for inaccuracies present in the collected data due to the lack of capability to determine the exact depth which the probe reached beyond the breakthrough of the drillhole. These findings were substantiated by accounts from Kensington personnel and observations by WSP regarding overbreak into the hanging wall and underbreak on footwall. Kensington personnel noted that overbreak into the paste backfill decreased when the standoff distance was increased from 2 ft to 3 ft.

## 2.3 Blast Performance

The performance of development and stope blasts was qualitatively inspected during loading and as soon as safe after the blast – typically the following day after mucking – to determine performance. The muckpiles were inspected for unexpected oversize and undetonated products. There was no unexpected oversize observed in the muckpiles, however, there was undetonated product observed. Parallel to the muckpile inspection the boundary of the new excavation was also examined. Particular attention was paid to the condition of the blastholes that were left. There consistently were undetonated explosives observed in and around the blasthole half barrels that were left behind. In addition, to the undetonated product there were also inconsistencies in the half barrel boundaries. These observations are further detailed in Sections 2.3.1 and 2.3.2.

### 2.3.1 Stope Blasts

In the inspections of various stope blasts it was noted that in many instances the collar locations of the first rings were too close. The proximity of the collar locations in the first rings was determined to be a potential source for undetonated explosives. WSP observed undetonated explosives following the blast of the stope in and around the blastholes. In addition to the undetonated explosives there were consistent observations of unbroken rock and half barrels disappearing into the rock, both indicating poor performance. These observations are displayed in Figure 2.6 with annotations detailed, as follows:

- The red outline indicates a borehole crushed along the full length.
- The blue outline shows the designed location of a blast hole with a portion of a half barrel.
- The green box indicates the location of where the half barrel disappears behind rock.
- The yellow box indicates where the booster detonated and caused crushing.

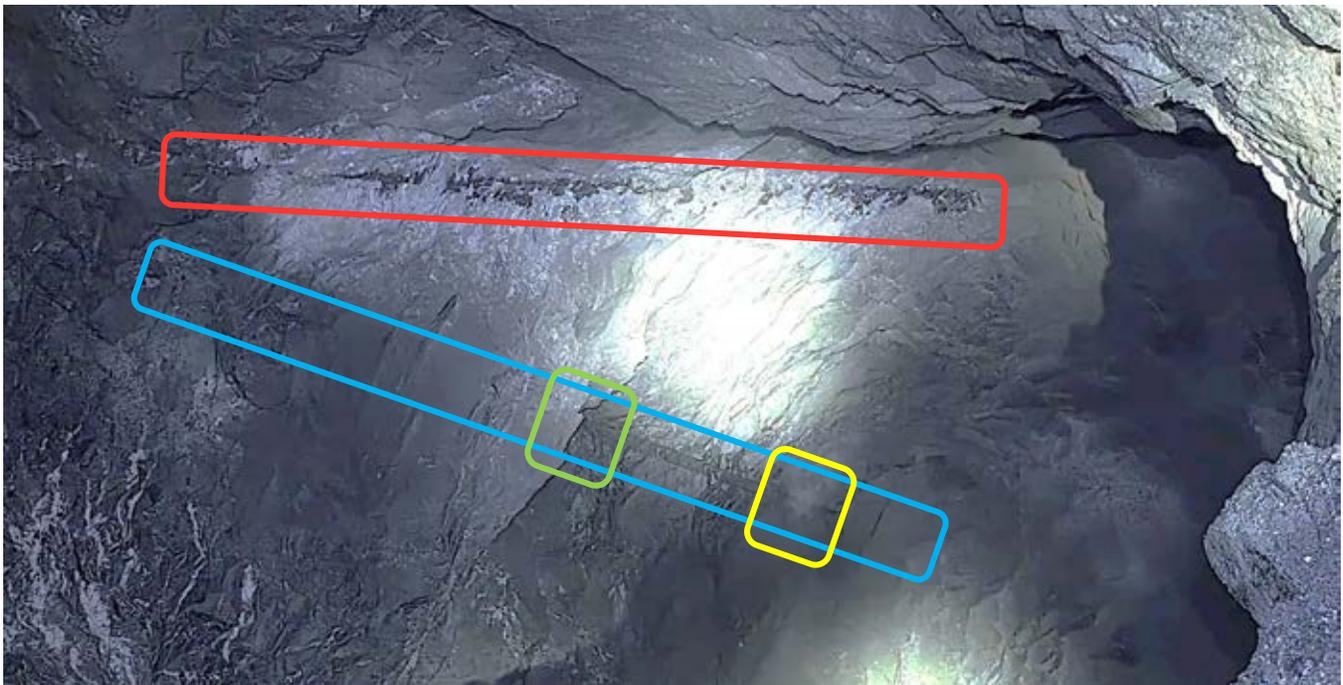


Figure 2.6. K1555-083 Stope Half Barrels

The loading of Stope K1555-083 was observed by WSP and there were no instances of improper loading procedures. In addition to observation WSP monitored this blast with VOD equipment and Aught Hole readings indicated proper performance, with respect to the capability of the emulsion to detonate as intended.

The portion of the blue blasthole outlined in yellow displays significant high pressure crushing surrounding a small area of the borehole. This indicates that the booster was still inside the blasthole when it detonated – i.e. there was no rock shifting that caused the booster to detonate outside of the blasthole – and that the emulsion surrounding the booster did not detonate. WSP observed this phenomenon in multiple instances across various stopes. This is likely due to nearby blastholes detonating and causing the explosive to deadpress. Deadpressing is a phenomenon in which an explosive is compressed beyond the critical density and is no longer capable of detonation.

Other observations displayed indications of deadpressing near the bottom of the blasthole and detonation at the top of the blasthole. This is attributed to the use of double priming and the base of the powder column that surrounds the booster being deadpressed and the portion of the column surrounding the upper booster not being deadpressed. This will produce minimally adverse blasting results but will increase explosive wastage. WSP identified this as design caused wastage due to tight collaring conditions increasing the likelihood of drill deviation from design that causes crossing, intersection, or closely spaced drillhole columns.

### 2.3.2 Development Blasts

The inspections of development blasts indicated good blast performance and occasional adverse blasting conditions that could or did cause explosive wastage. Signs of good blast performance were low fumes, crushing surrounding the boot of the blasthole, and consistent fragmentation. Adverse blasting conditions were mostly due to high groundwater in the face. This adverse condition causing wastage was confirmed with the observation of undetonated explosive being discovered during post-blast inspection of the face. Figure 2.7 shows a developmental face on the 2720 level that displays good crushing in the back of the hole, indicating proper detonation of the explosives.



Figure 2.7. Back of Hole Crushing

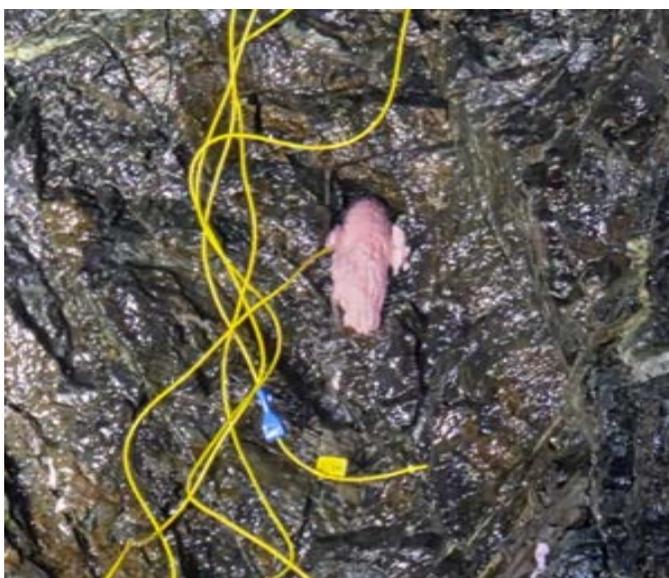
Kensington personnel load development headings with stick powder in wet holes to decrease the chance of explosive seepage. This is done with a trace detonating cord that runs along the length of the hole to ensure detonation of all sticks. Despite this appropriate technique, multiple post-blast inspections had signs of misfires and partial detonation. These signs included partially detonated stick powder, as shown in Figure 2.8.



**Figure 2.8. Undetonated Emulsion Chub in Boot**

The application of a detonating cord trace with stick powder to allow water flow in holes was negated by tamping of the powder. Tamping will disallow water flow and increase the likelihood of stick separation in the powder column and causing undetonated explosives to be left following as a blast, as shown in Figure 2.8.

Occasionally there are holes loaded with bulk emulsion that were originally thought to be dry. WSP observed this occurring on multiple occasions, and the explosive was pushed out of the blasthole due to water pressure, as shown in Figure 2.9



**Figure 2.9. Emulsion Seepage Due to Water Pressure**

These are indications of improper implementation caused explosives wastage and the water is not being appropriately accounted for. In addition to this WSP observed multiple instances of direct use wastage. During development loading there was noticeable emulsion spilled outside of the blastholes that would have no way to detonate. Secondly, collar pipe was found following blasts still full of explosive emulsion. This is attributed to the observed loading practice of loading to the end of the collar pipe rather than stopping loading at the end of rock. Lastly, the loading hose was primed and cleaned out either onto the ground or into a relief hole in the burn. All three of these are instances in which explosives have no opportunity to detonate and are thus directly contributing to the Site wastage.

### 3.0 RECOMMENDATIONS AND CONCLUSIONS

The following are recommendations based on the qualitative and quantitative data obtained while on Site, conversations with Kensington personnel, and review of documentation.

#### 3.1 Stopping Recommendations

- Limit decreasing the ring-to-ring distance:
  - Typical intra-ring distance is 6 ft and designs should strive to stay nearest to this number to minimize deviation causing hole interactions. This can cause deadpressing and therefore explosive wastage. When the area is tight designs have decreased ring-to-ring distances. An example comparing typical ring spacing, to current typical designs in short development drives and proposed typical designs in short development drives is provided in Figure 3.1.

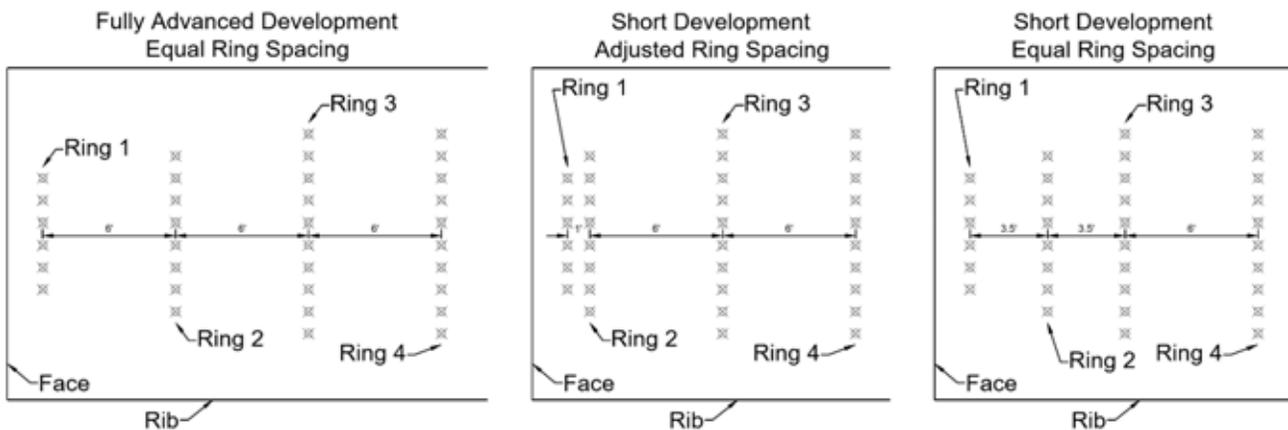


Figure 3.1. Ring Spacing Comparison

- The azimuth and inclination should be adjusted to target the same toe. This will help to account for the field conditions limiting drilling capabilities and excessive collars in a tight area which can lead to misloading.
- WSP acknowledges that altering the ring spacing is not always an option. In such cases, the uncharged length should be increased to maintain an appropriate distance between explosive columns.

- Decrease the inclination of blastholes along the footwall:
  - WSP deviation data indicates that holes deviate away from the footwall. Decreasing the angle will increase breakage of the footwall and decrease the likelihood of hole interaction.
  - The data provided in this report is similar to previous deviation reports and field conditions but is a limited dataset. Downhole surveying should continue to confirm the average deviation present in stoping holes.
- Increase the bottom of hole offset from the hanging wall:
  - Similar to the increased offset from paste backfill improving performance the same will occur when the offset is increased from the hanging wall. As mentioned above, the deviation data shows increased drillhole walk towards the drillhole wall. Increasing the offset will decrease overbreak into the hanging wall and decrease the likelihood of hole interaction.

## 3.2 Development Recommendations

- Priming and cleaning of the hose at the end of loading:
  - The best option to alleviate direct use wastage is to prime and clean the hose into buckets and ship off Site for proper disposal.
  - The next option is to minimize the amount of explosive left in the hose for cleaning by starting the clearing process on the second to last hole.
  - Next would be to pump the extra explosive in the hose back into the truck. However, this does increase the risk of excessive water in the tank if there is excessive recycle occurring.
  - The last option would be to continue with the current procedure and prime and clear the hose into a relief hole. This relief hole should then be primed with a booster and fired with the Aught Hole. This option, however, decreases blast performance and may cause extremely poor advance. This option is not recommended and is only a method to minimize direct use wastage when existing procedures continue incidentally, rather than one of the above recommendations.
- Prevent overloading floor holes or holes with collar pipe:
  - Operators should not load to the end of the collar pipe and rather stop loading while the powder column is in rock. This prevents direct use wastage of the explosive in the collar pipe being separated from the rest of the column thereby disallowing detonation.
- Limit the effect of water pressure in holes:
  - Holes observed by loading crews to have water flowing should be loaded with stick powder and a detonating cord tracer along the length of the hole. The detonating cord tracer should be matched to the stick explosive based on manufacturer recommendations. Detonating cord that is too small will only damage the emulsion, causing wastage, rather than detonate the stick.
  - The sticks should be pressed into the hole to increase contact but not tamped. The hole should then be capped with a hole plug that allows water flow.

- If water pressure is still a problem and emulsion or sticks are observed to be pushed out by the water, then weep holes should be drilled to allow for water pressure release. This can cause a decrease blast performance, because the weep holes will allow release of energy, rather than rock fragmentation. If weep holes are implemented and there is a severe decrease in performance observed then the weep holes should be loaded with two sticks of powder, timed to shoot with the hole that they are weeping for, and capped with a hole plug that allows water flow.

These recommendations should be implemented and followed by scrutiny of results. Stope design changes should be supplemented by comparing scanned results of stope excavation and collection of drillhole deviation. WSP recommends that this continued data collection also be completed in conjunction with drill manufacturer discussions. Improvements to drilling accuracy during set-up will improve toe deviation as well. Changes to the development blasting process pose a much lower risk and should be implemented as soon as feasible for the operation to decrease wastage.

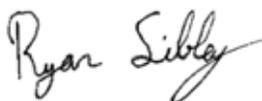
In conclusion, the major focus of blasting operation improvements to decrease Ammonia and Nitrate concentrations should focus on tighter housekeeping procedures, limiting the effect deviation has on explosive performance through design alterations and ensuring proper equipment functionality, and altering loading when high amounts of water is present.

## 4.0 CLOSING

WSP appreciates the opportunity to provide this Report and these Services to CoeurAK. If there are any questions, or comments, about the content of this Report, please contact the undersigned.

Sincerely,

**WSP USA Inc.**



Ryan Sibley, MS  
*Associate Consultant, Explosives Engineering*

RS/PP



Paul Pigeon, PE (CO)  
*Vice President, Water Treatment*

Distribution: Coeur Alaska, WSP, Thoroughbred Drill and Blast Consultants

Attachments: Attachment 1 – Titan 7000 TDS  
Attachment 2 – Borehole Deviation Reports  
Attachment 3 – VOD Reports  
Attachment 4 – Daily Reports  
Attachment 5 – Alternative Ring Collar Design

**ATTACHMENT 1:**

# **TITAN 7000 TDS**

# TECHNICAL DATA SHEET



## TITAN<sup>®</sup> 7000

### Sensitized Bulk Emulsion

#### Properties

SDS  
#1062

	Pumped
Density <sup>a</sup> (g/cc) Avg (25-35 °C)	1.20 ± 0.03
Energy <sup>b</sup> cal/g (cal/cc)	690 (830)
Relative Weight Strength <sup>c</sup>	0.78
Relative Bulk Strength <sup>c</sup>	1.14
Velocity <sup>d</sup> m/sec (ft/sec)	5,500 (18,000)
Detonation Pressure <sup>d</sup> (Kbars)	91
Gas Volume <sup>b</sup> (moles/kg)	42.2
Water Resistance	Excellent
Fume Class	IME1 and NRCan1 <sup>e</sup>
Minimum Hole Diameter (mm)	1.75 (45)
Loading Method	Pumped/Extruded

<sup>a</sup> Additionally, density of product is expected to increase by 0.01 - 0.02 g/cc for every decrease of 20°C.

<sup>b</sup> All Dyno Nobel Inc. energy and gas volume values are calculated using PRODET<sup>™</sup>, a computer code developed by Dyno Nobel Inc. for its exclusive use. Other computer codes may give different values.

<sup>c</sup> ANFO = 1.00 @ 0.82 g/cc

<sup>d</sup> Unconfined in 50 mm (2 in) diameter at average density.

<sup>e</sup> Approved by Natural Resources Canada as NRC Fume Class 1

#### Hazardous Shipping Description

Explosive, Blasting, Type B, 1.5D, UN 0331, II OR  
Ammonium Nitrate, Fuel Oil Mixture, 1.5D, NA 0331, II



#### Product Description

TITAN 7000 is a booster sensitive, high performance, repumpable bulk emulsion explosive designed specifically for use in underground construction, quarry and mining operations. Applications include drift and raise development, shaft sinking and tunneling. In addition, other underground mining methods in which TITAN 7000 has proven effective are room and pillar, mechanized cut and fill, vertical crater retreat, uppers retreat, benching and block caving.



#### Application Recommendations

- Minimum cast booster weight recommended for use as a primer for TITAN 7000 is a 90 gram cast booster down to -20° C (-4° F). A 20 gram cast booster may also be recommended based on local site conditions. Discuss with a Dyno Nobel representative for recommendations.
- **ALWAYS** double prime when bulk explosive columns exceed 6 m (20 ft). One primer should be positioned near the bottom of the hole and the second near to the collar.
- **ALWAYS** ensure primers are in the explosive column.
- **ALWAYS** consult a Dyno Nobel representative for specific recommendations before designing a TITAN 7000 blasting program involving the use of detonating cord. TITAN 7000 may be used with detonating cord only under special conditions.
- Maximum hole depth is 30 m (100 ft) but special formulations are available for deeper boreholes. Consult your Dyno Nobel representative for details.

Product Disclaimer: Please see reverse side.

**DYNO<sup>®</sup>**  
Dyno Nobel



## TITAN® 7000

### Sensitized Bulk Emulsion

- Borehole sleep time is one (1) month.
- **ALWAYS** insert the loading hose to the back of the hole before pumping TITAN 7000 to optimize loading density.
- **ALWAYS** consult your Dyno Nobel representative for special equipment and loading recommendations before planning a TITAN 7000 blast program that requires collar loading.
- Specialized equipment features are necessary to enable the TITAN 7000 emulsion explosive to remain in upholes after loading. Contact your Dyno Nobel representative for equipment recommendations.
- **ALWAYS** check any TITAN 7000 loading system before each use to ensure that all components meet operational standards including all safety systems. Equipment should be calibrated periodically to ensure emulsion explosive quality and explosive performance.
- Consider Dyno Nobel's DynoMiner® Advance, DynoMiner Shaft or DynoMiner Uphole delivery systems to maximize safety when loading TITAN 7000 bulk explosives underground. DynoMiner is easy to operate and maintain, reduces manual product handling, improves efficiency and flexibility and incorporates a robust design for dependable operation in the underground environment. Contact your Dyno Nobel representative for details.

### Transportation, Storage and Handling

- TITAN 7000 can be stored for 3 months at temperatures between 0° F and 90° F (-18° C and 32° C). Older product should be used first and all storage tanks should be kept clean of residual product.
- Use only pumps which have been approved by Dyno Nobel for 1.5 emulsion explosive transfer. Pump type, pump speed, worn pump parts, repeated repumping and pumping against high hose pressures can increase TITAN 7000 viscosity and decrease shelf life.
- **ALWAYS** monitor emulsion pump performance and check pumps periodically for excessively worn parts. Design storage facilities to minimize repeated pumping.
- Transport, store, handle and use TITAN 7000 in compliance with federal, state, provincial and local laws governing bulk explosives.

**ADDITIONAL INFORMATION** – Visit [dynonobel.com](http://dynonobel.com) for Brochures and Case Studies related to this product.

**Product Disclaimer:** Dyno Nobel Inc. and its subsidiaries disclaim any warranties with respect to this product, the safety or suitability thereof, or the results to be obtained, whether express or implied, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND/OR OTHER WARRANTY. Buyers and users assume all risk, responsibility and liability whatsoever from any and all injuries (including death), losses, or damages to persons or property arising from the use of this product. Under no circumstances shall Dyno Nobel Inc. or any of its subsidiaries be liable for special, consequential or incidental damages or for anticipated loss of profits.

**ATTACHMENT 2:**

# **BOREHOLE DEVIATION REPORTS**

# Deployment Report

## R1-H01



Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 14:46

	Inclination	Azimuth	Length	Depth
Measured	3.18°	213.80°	52.49'	-52.40'
Planned	4.00°	180.00°	52.00'	-51.87'
Deviation	0.82°	33.80°	0.49'	0.52'

	Easting	Northing	Elevation
Collar	-6.00'	1.50'	0.00'
Measured End	-7.62'	-0.92'	-52.40'
Designed End	-6.00'	-2.13'	-51.87'

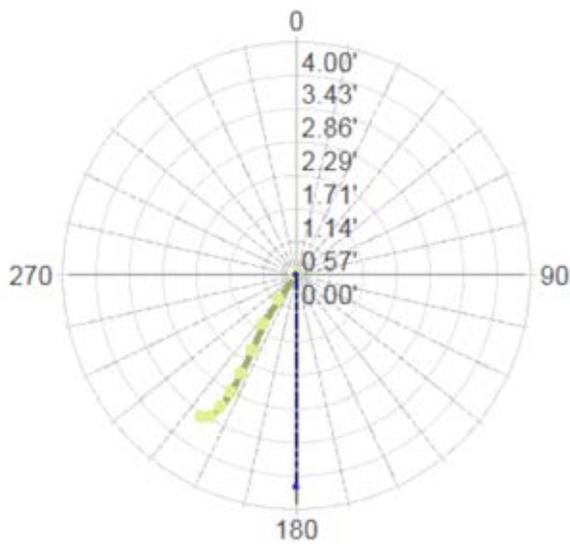
Alignment Name: Alignment 15:44

Alignment Time: 14:44:39

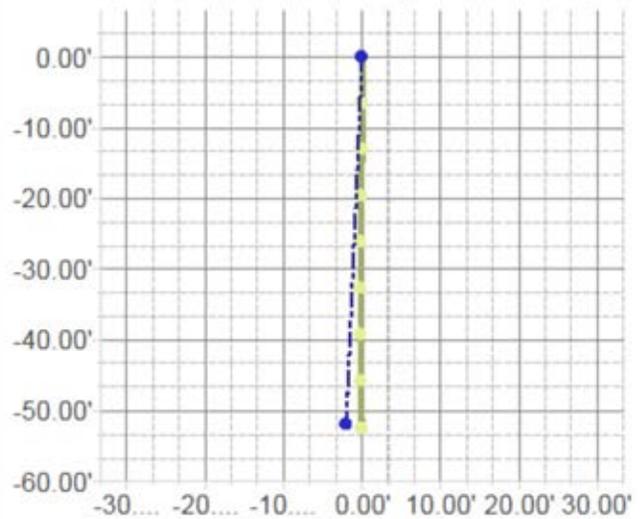
Calibration Angle: 180.00°

End Deviation 2.09'

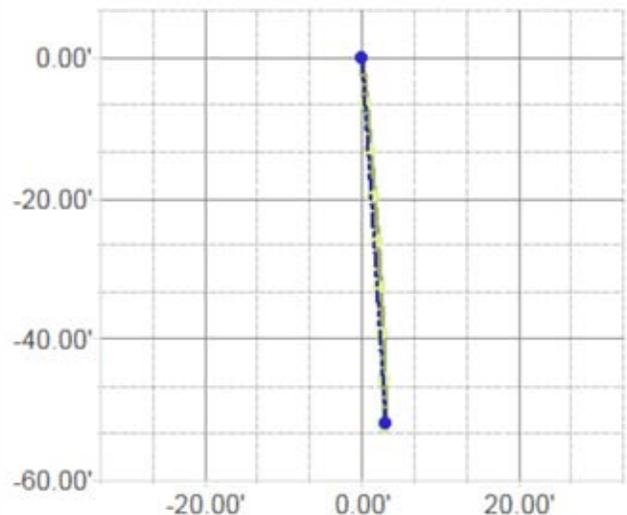
### Top



### Back



### Side



	AZ	INC	Length	DEV	DEV %	Elevation
●	215.9°	4.5°	6.56'	0.31'	4.66%	-6.54'
●	210.9°	4.4°	13.12'	0.56'	4.30%	-13.08'
●	203.9°	4.3°	19.69'	0.76'	3.87%	-19.63'
●	205.2°	3.9°	26.25'	0.96'	3.65%	-26.17'
●	208.4°	3.2°	32.81'	1.15'	3.51%	-32.73'
●	215.5°	2.5°	39.37'	1.38'	3.50%	-39.28'
●	226.1°	2.1°	45.93'	1.66'	3.61%	-45.84'
●	270.1°	1.4°	52.49'	2.09'	3.98%	-52.40'

# Deployment Report

## R1-H02

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 14:49

	Inclination	Azimuth	Length	Depth
Measured	2.81°	302.29°	51.74'	-51.68'
Planned	1.50°	0.00°	52.00'	-51.98'
Deviation	1.31°	57.71°	0.26'	0.30'

	Easting	Northing	Elevation
Collar	-6.00'	2.50'	0.00'
Measured End	-8.14'	3.85'	-51.68'
Designed End	-6.00'	3.86'	-51.98'

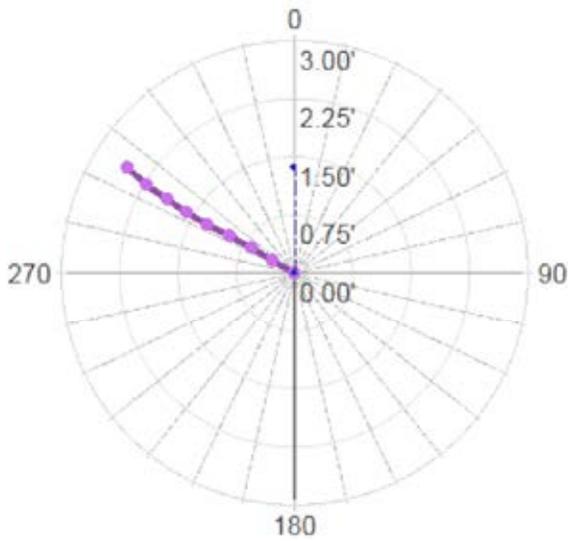
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Alignment Time: 14:44:39

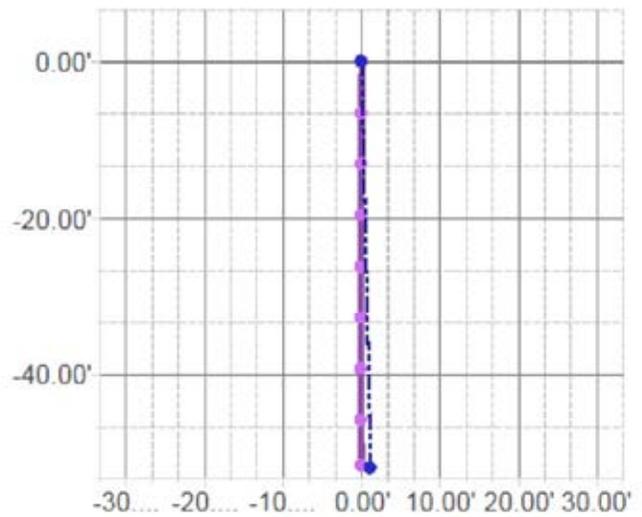
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End Deviation 2.16'

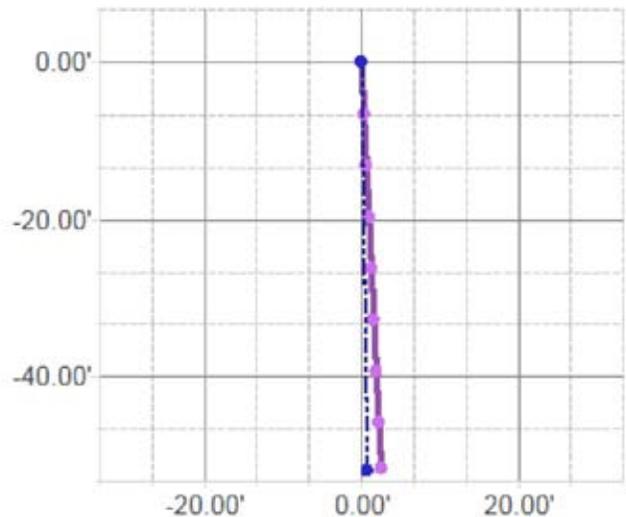
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	AZ	INC	Length	DEV	DEV %	Elevation
●	300.2°	2.8°	6.56'	0.28'	4.23%	-6.55'
●	301.2°	2.8°	13.12'	0.55'	4.17%	-13.11'
●	298.0°	2.8°	19.69'	0.83'	4.22%	-19.66'
●	296.8°	2.8°	26.25'	1.12'	4.27%	-26.22'
●	301.1°	2.7°	32.81'	1.38'	4.22%	-32.77'
●	304.2°	2.7°	39.37'	1.64'	4.16%	-39.32'
●	304.3°	2.8°	45.93'	1.90'	4.14%	-45.88'
●	312.2°	3.3°	51.74'	2.14'	4.14%	-51.68'

# Deployment Report

## R1-H03

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 14:53

	Inclination	Azimuth	Length	Depth
Measured	8.99°	337.04°	52.49'	-51.85'
Planned	9.00°	0.00°	53.00'	-52.35'
Deviation	0.01°	22.96°	0.51'	0.50'

	Easting	Northing	Elevation
Collar	-6.00'	3.50'	0.00'
Measured End	-9.20'	11.05'	-51.85'
Designed End	-6.00'	11.79'	-52.35'

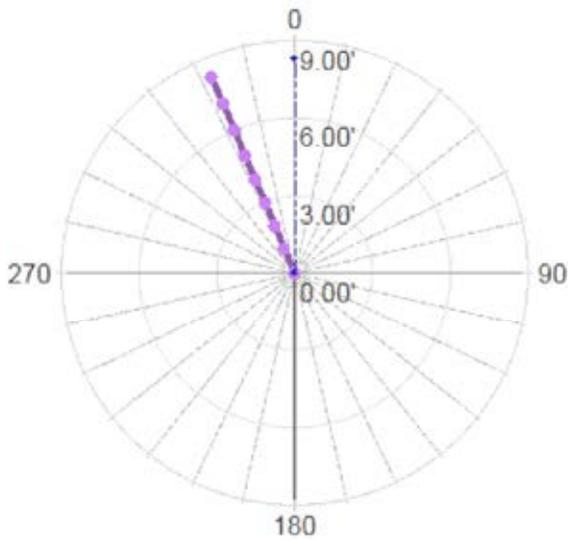
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Alignment Time: 14:44:39

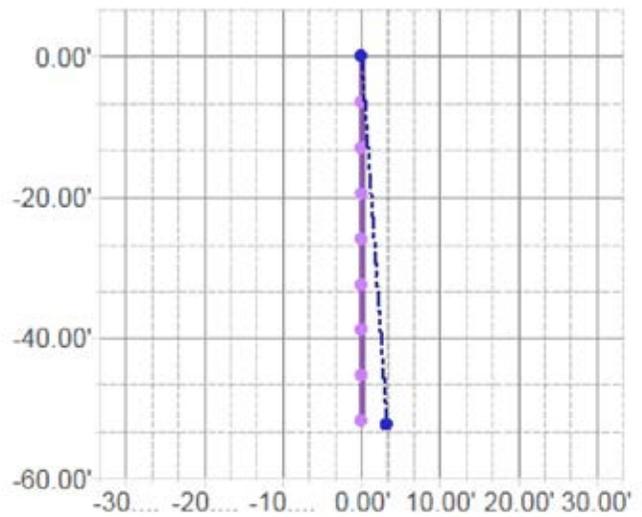
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End Deviation 3.32'

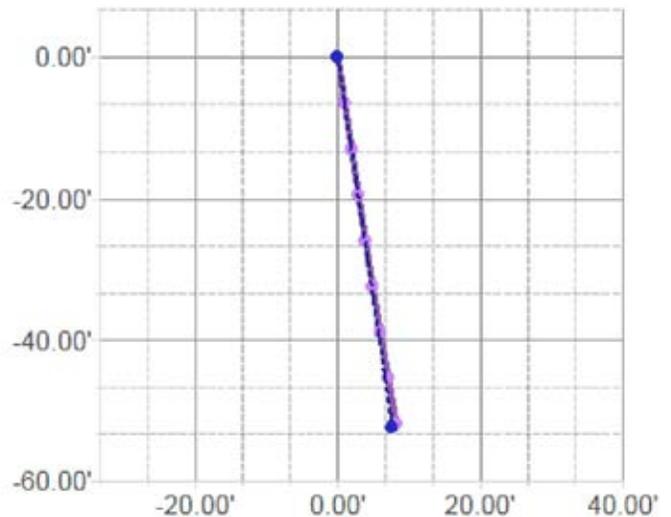
### Top



### Back



### Side



	AZ	INC	Length	DEV	DEV %	Elevation
●	337.6°	8.7°	6.56'	0.39'	6.00%	-6.49'
●	337.8°	8.4°	13.12'	0.78'	5.95%	-12.98'
●	337.4°	8.4°	19.69'	1.17'	5.97%	-19.47'
●	335.9°	8.5°	26.25'	1.59'	6.07%	-25.96'
●	337.0°	8.9°	32.81'	2.00'	6.09%	-32.44'
●	338.2°	9.4°	39.37'	2.39'	6.07%	-38.91'
●	336.7°	9.7°	45.93'	2.81'	6.13%	-45.38'
●	335.8°	9.9°	52.49'	3.26'	6.22%	-51.85'

# Deployment Report

## R1-H04

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 14:56

	Inclination	Azimuth	Length	Depth
Measured	13.85°	354.71°	52.49'	-50.96'
Planned	13.00°	0.00°	54.00'	-52.62'
Deviation	0.85°	5.29°	1.51'	1.65'

	Easting	Northing	Elevation
Collar	-6.00'	4.50'	0.00'
Measured End	-7.16'	17.01'	-50.96'
Designed End	-6.00'	16.65'	-52.62'

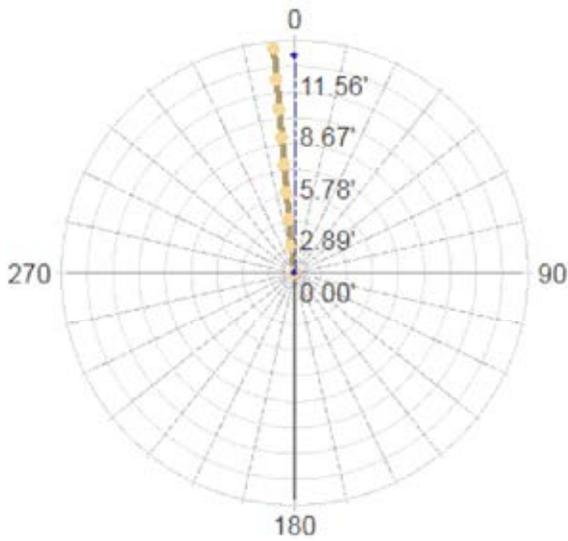
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Alignment Time: 14:44:39

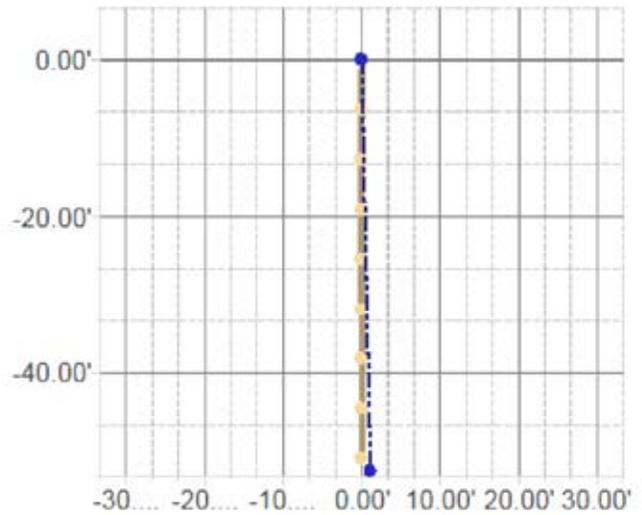
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End Deviation 2.05'

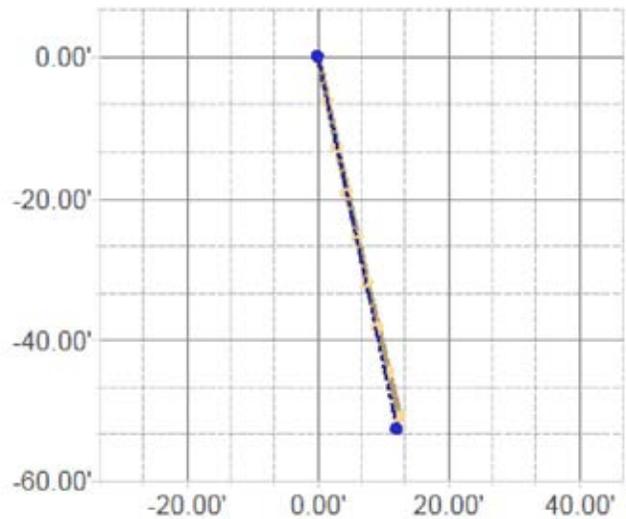
### Top



### Back



### Side



	AZ	INC	Length	DEV	DEV %	Elevation
●	353.7°	13.2°	6.56'	0.16'	2.50%	-6.39'
●	354.1°	13.0°	13.12'	0.32'	2.41%	-12.78'
●	355.1°	13.5°	19.69'	0.45'	2.29%	-19.16'
●	355.6°	13.7°	26.25'	0.58'	2.21%	-25.54'
●	354.8°	13.4°	32.81'	0.72'	2.20%	-31.92'
●	354.8°	14.1°	39.37'	0.89'	2.27%	-38.29'
●	355.2°	14.9°	45.93'	1.11'	2.41%	-44.63'
●	354.3°	15.1°	52.49'	1.37'	2.61%	-50.96'

# Deployment Report

## R1-H05

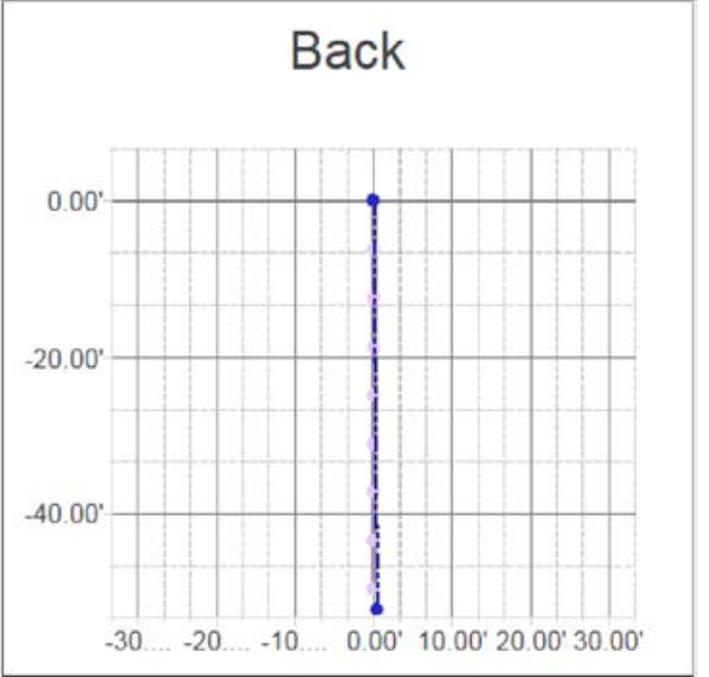
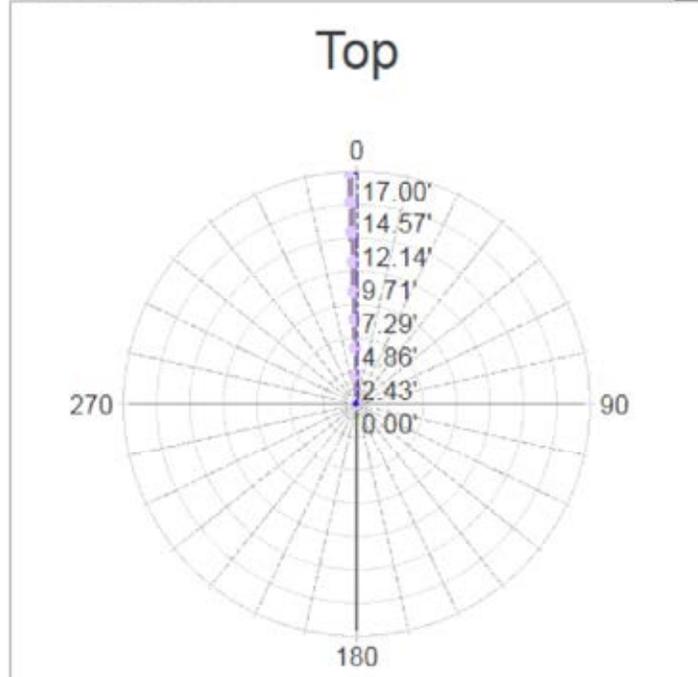
Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 14:59

	Inclination	Azimuth	Length	Depth
Measured	18.80°	358.35°	52.49'	-49.69'
Planned	18.00°	0.00°	55.00'	-52.31'
Deviation	0.80°	1.65°	2.51'	2.62'

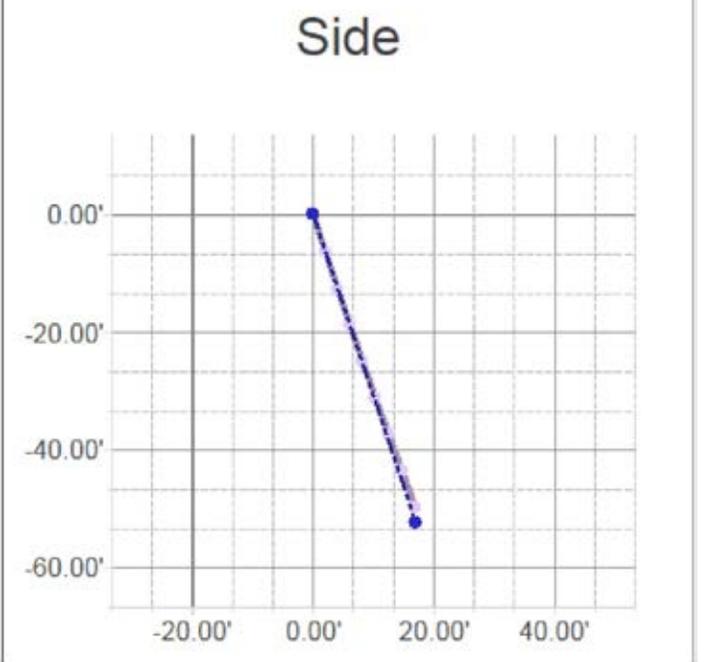
	Easting	Northing	Elevation
Collar	-6.00'	5.50'	0.00'
Measured End	-6.49'	22.40'	-49.69'
Designed End	-6.00'	22.50'	-52.31'

Alignment Name: Alignment 15:44  
 Alignment Time: 14:44:39      Calibration Angle: 180.00°

End Deviation 2.66'



	AZ	INC	Length	DEV	DEV %	Elevation
●	359.7°	18.0°	6.56'	0.01'	0.18%	-6.24'
●	359.5°	18.0°	13.12'	0.03'	0.23%	-12.48'
●	358.3°	18.2°	19.69'	0.09'	0.46%	-18.72'
●	357.7°	18.6°	26.25'	0.19'	0.74%	-24.93'
●	358.3°	19.1°	32.81'	0.32'	0.96%	-31.13'
●	358.1°	19.5°	39.37'	0.49'	1.23%	-37.32'
●	357.8°	19.6°	45.93'	0.68'	1.48%	-43.50'
●	357.5°	19.4°	52.49'	0.87'	1.66%	-49.69'





# Deployment Report

## R2-H01



Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 15:03

	Inclination	Azimuth	Length	Depth
Measured	23.31°	179.94°	39.37'	-36.15'
Planned	23.40°	180.00°	48.00'	-44.05'
Deviation	0.09°	0.06°	8.63'	7.90'

	Easting	Northing	Elevation
Collar	0.00'	0.00'	0.00'
Measured End	0.02'	-15.58'	-36.15'
Designed End	0.00'	-19.06'	-44.05'

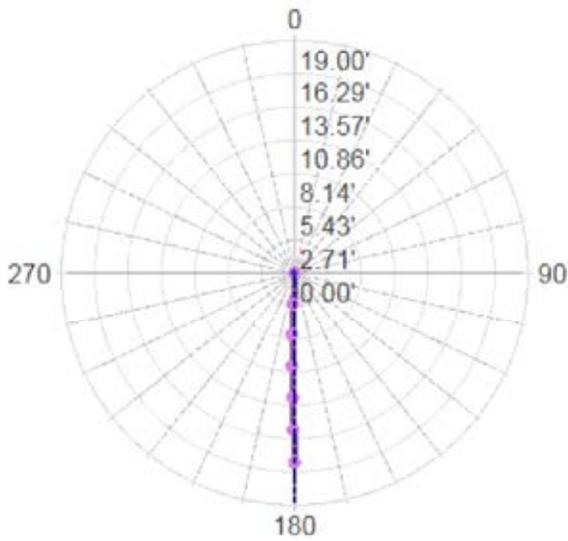
Alignment Name: Alignment 16:01

Alignment Time: 15:01:37

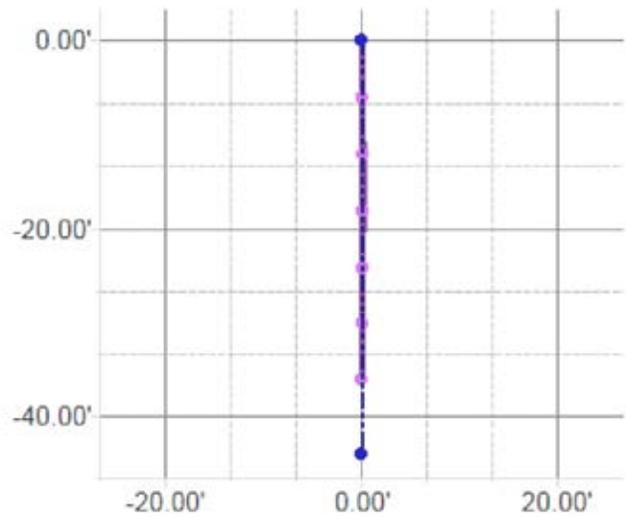
Calibration Angle: 180.00°

End Deviation 8.63'

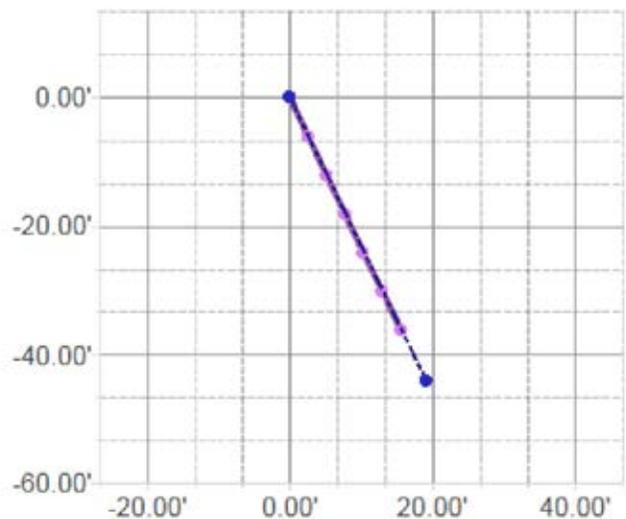
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### Side



	AZ	INC	Length	DEV	DEV %	Elevation
●	181.8°	22.9°	6.56'	0.10'	1.49%	-6.04'
●	181.6°	23.2°	13.12'	0.17'	1.31%	-12.08'
●	179.9°	23.1°	19.69'	0.19'	0.96%	-18.11'
●	179.1°	23.1°	26.25'	0.19'	0.71%	-24.15'
●	179.3°	23.8°	32.81'	0.13'	0.39%	-30.15'
●	178.1°	23.8°	39.37'	0.06'	0.16%	-36.15'

# Deployment Report

## R2-H02

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 15:06

	Inclination	Azimuth	Length	Depth
Measured	18.31°	178.72°	45.93'	-43.60'
Planned	18.30°	180.00°	56.00'	-53.17'
Deviation	0.01°	1.28°	10.07'	9.57'

	Easting	Northing	Elevation
Collar	0.00'	1.00'	0.00'
Measured End	0.32'	-13.42'	-43.60'
Designed End	0.00'	-16.58'	-53.17'

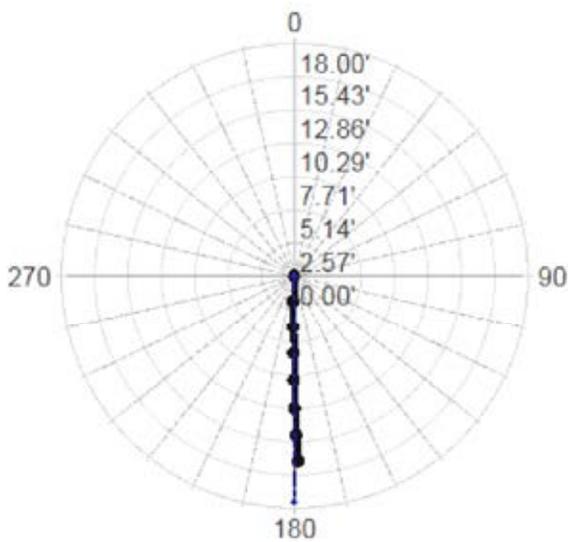
Alignment Name: Alignment 16:01

Alignment Time: 15:01:37

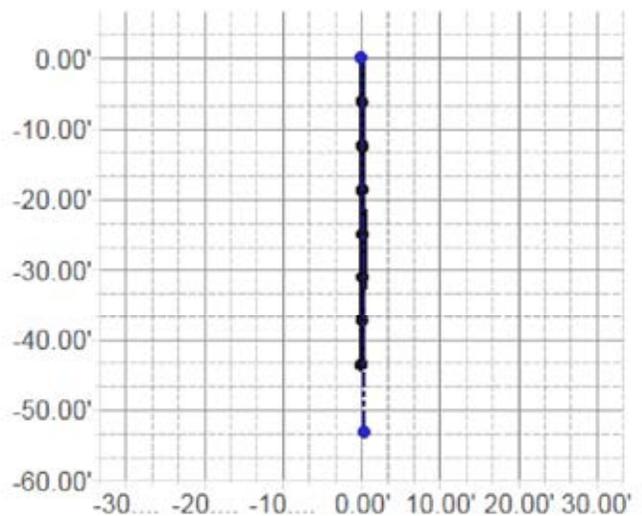
Calibration Angle: 180.00°

End Deviation 10.08'

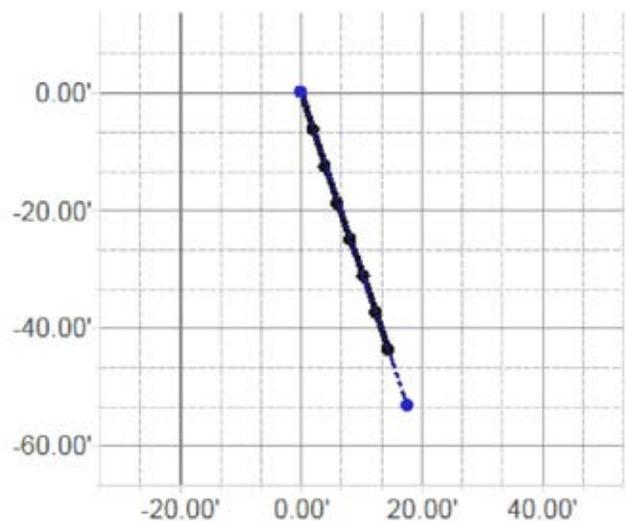
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	AZ	INC	Length	DEV	DEV %	Elevation
●	182.1°	17.8°	6.56'	0.09'	1.43%	-6.25'
●	180.2°	17.9°	13.12'	0.14'	1.03%	-12.49'
●	178.7°	18.1°	19.69'	0.14'	0.70%	-18.73'
●	179.2°	18.9°	26.25'	0.07'	0.25%	-24.94'
●	178.9°	19.4°	32.81'	0.07'	0.23%	-31.13'
●	176.6°	18.5°	39.37'	0.18'	0.47%	-37.35'
●	175.4°	17.6°	45.93'	0.32'	0.70%	-43.60'

# Deployment Report

## R2-H03

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 15:08

	Inclination	Azimuth	Length	Depth
Measured	11.58°	175.18°	45.93'	-44.98'
Planned	12.30°	180.00°	54.00'	-52.76'
Deviation	0.72°	4.82°	8.07'	7.78'

	Easting	Northing	Elevation
Collar	0.00'	2.00'	0.00'
Measured End	0.78'	-7.18'	-44.98'
Designed End	0.00'	-9.50'	-52.76'

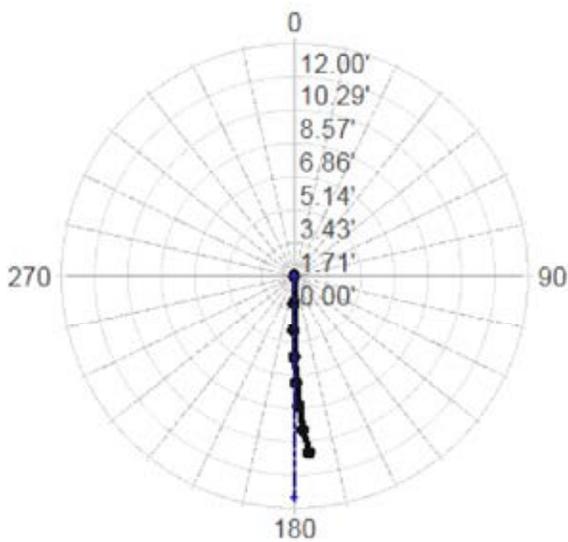
Alignment Name: Alignment 16:01

Alignment Time: 15:01:37

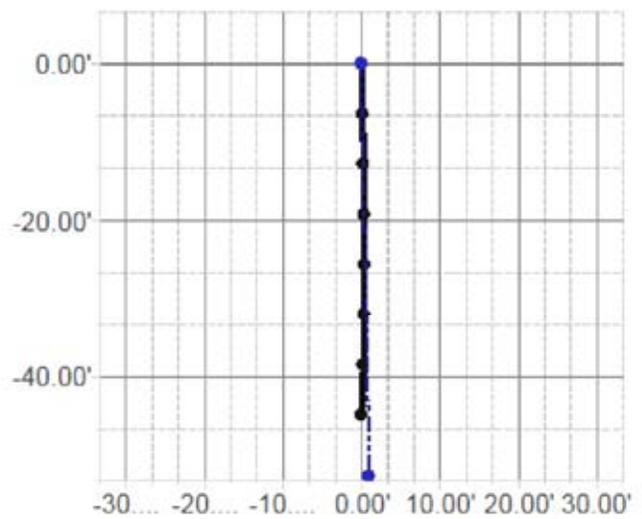
Calibration Angle: 180.00°

End Deviation 8.15'

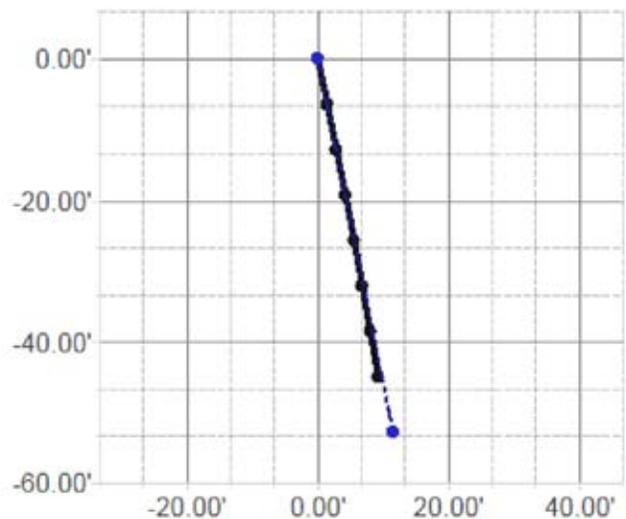
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	AZ	INC	Length	DEV	DEV %	Elevation
●	180.1°	12.7°	6.56'	0.04'	0.61%	-6.40'
●	180.7°	12.5°	13.12'	0.06'	0.49%	-12.81'
●	178.9°	12.2°	19.69'	0.05'	0.27%	-19.22'
●	175.9°	11.6°	26.25'	0.10'	0.40%	-25.65'
●	173.4°	10.8°	32.81'	0.32'	0.98%	-32.09'
●	170.7°	10.8°	39.37'	0.59'	1.50%	-38.54'
●	164.3°	10.8°	45.93'	0.99'	2.15%	-44.98'

# Deployment Report

R2-H04 

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 15:10

	Inclination	Azimuth	Length	Depth
Measured	5.91°	163.10°	45.93'	-45.66'
Planned	6.90°	180.00°	53.00'	-52.62'
Deviation	0.99°	16.90°	7.07'	6.96'

	Easting	Northing	Elevation
Collar	0.00'	3.00'	0.00'
Measured End	1.37'	-1.52'	-45.66'
Designed End	0.00'	-3.37'	-52.62'

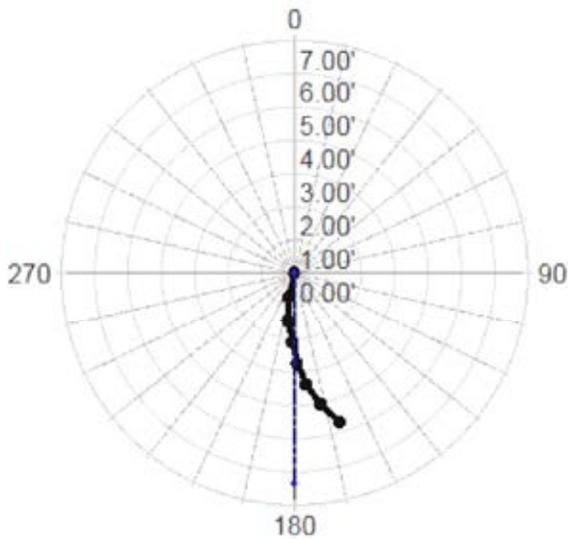
Alignment Name: Alignment 16:01

Alignment Time: 15:01:37

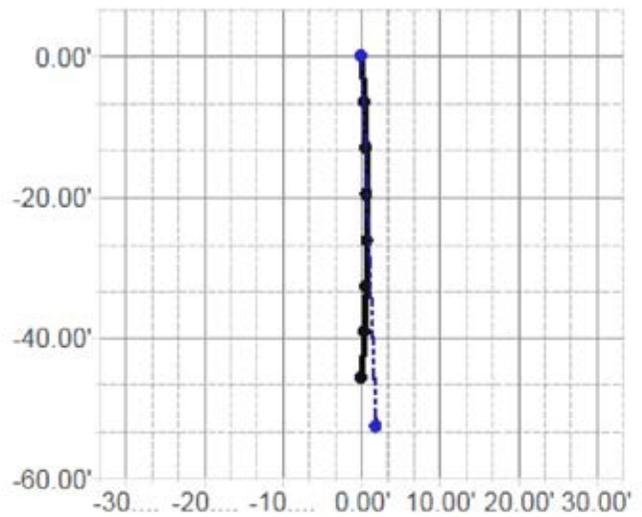
Calibration Angle: 180.00°

End Deviation 7.33'

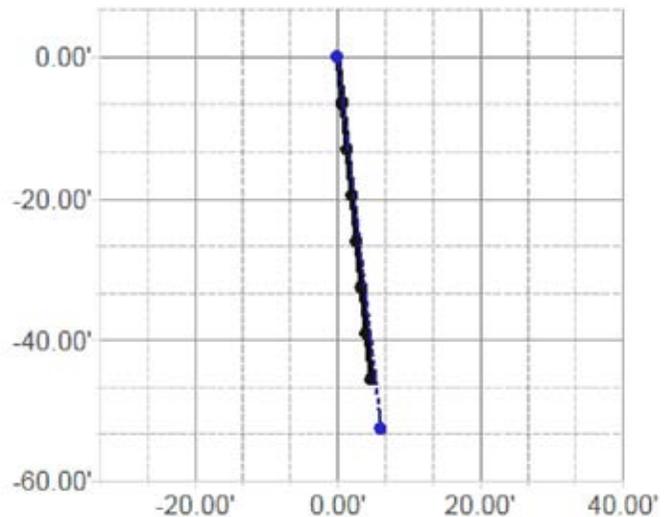
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	AZ	INC	Length	DEV	DEV %	Elevation
●	193.7°	6.7°	6.56'	0.19'	2.84%	-6.52'
●	181.1°	6.3°	13.12'	0.23'	1.72%	-13.04'
●	167.6°	5.8°	19.69'	0.26'	1.31%	-19.57'
●	167.5°	5.8°	26.25'	0.40'	1.54%	-26.09'
●	157.5°	6.0°	32.81'	0.65'	1.99%	-32.62'
●	143.1°	6.5°	39.37'	1.09'	2.77%	-39.14'
●	132.8°	6.8°	45.93'	1.70'	3.70%	-45.66'

# Deployment Report

R2-H05 

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 15:13

	Inclination	Azimuth	Length	Depth
Measured	1.66°	49.91°	50.99'	-50.96'
Planned	0.40°	0.00°	53.00'	-53.00'
Deviation	1.26°	49.91°	2.01'	2.04'

	Easting	Northing	Elevation
Collar	0.00'	4.00'	0.00'
Measured End	1.13'	4.95'	-50.96'
Designed End	0.00'	4.37'	-53.00'

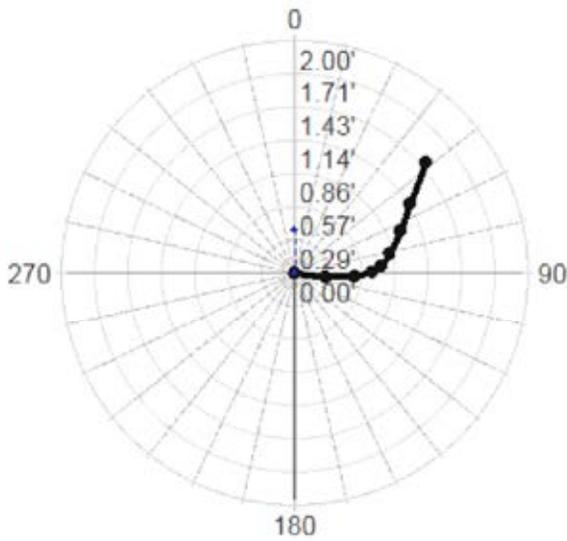
Alignment Name: Alignment 16:13

Alignment Time: 15:13:13

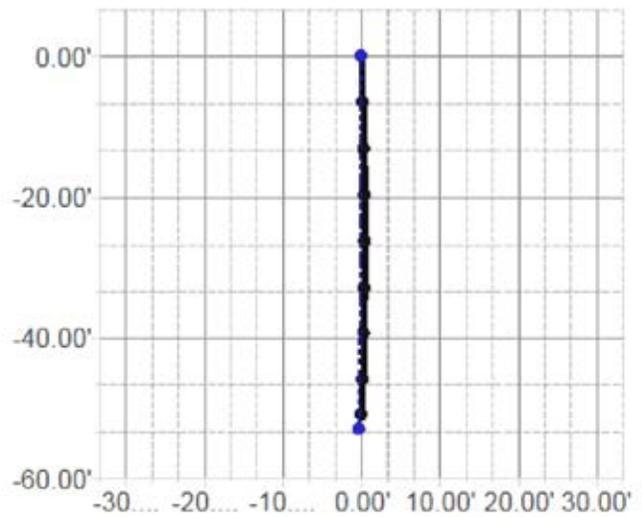
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End Deviation 2.40'

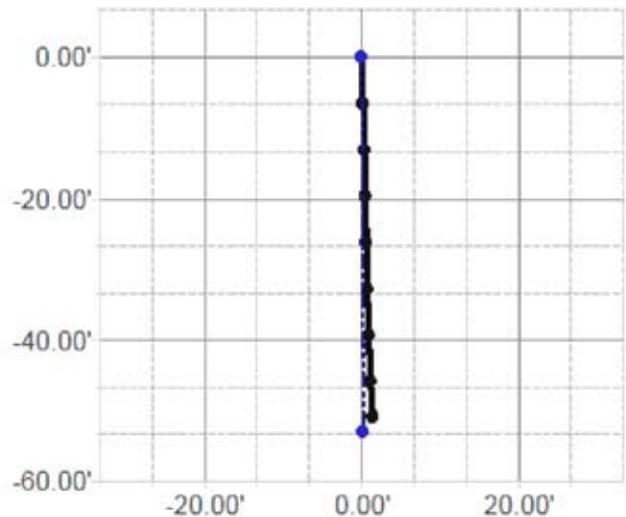
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	AZ	INC	Length	DEV	DEV %	Elevation
●	97.6°	2.4°	6.56'	0.28'	4.25%	-6.56'
●	88.7°	2.2°	13.12'	0.53'	4.05%	-13.11'
●	75.2°	1.4°	19.69'	0.68'	3.47%	-19.67'
●	56.2°	0.8°	26.25'	0.76'	2.88%	-26.23'
●	34.9°	1.1°	32.81'	0.82'	2.50%	-32.79'
●	25.2°	1.8°	39.37'	0.91'	2.32%	-39.35'
●	19.8°	2.2°	45.93'	1.03'	2.24%	-45.91'
●	20.7°	4.3°	50.99'	1.28'	2.50%	-50.96'

# Deployment Report

R2-H06 

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 15:15

	Inclination	Azimuth	Length	Depth
Measured	7.12°	1.29°	51.59'	-51.19'
Planned	5.30°	0.00°	53.00'	-52.77'
Deviation	1.82°	1.29°	1.41'	1.58'

	Easting	Northing	Elevation
Collar	0.00'	5.00'	0.00'
Measured End	0.14'	11.39'	-51.19'
Designed End	0.00'	9.90'	-52.77'

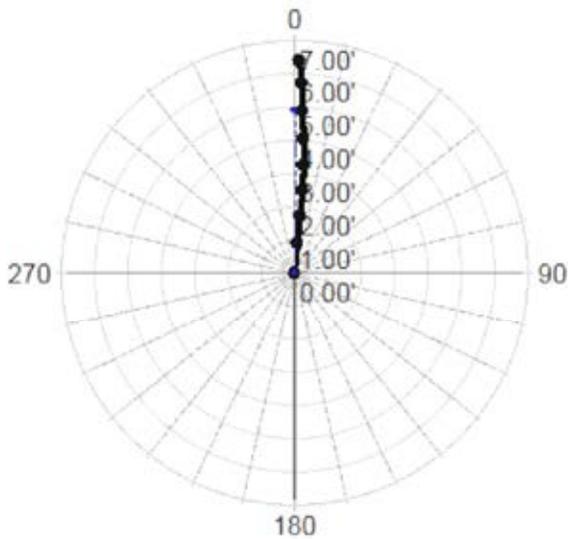
Alignment Name: Alignment 16:13

Alignment Time: 15:13:13

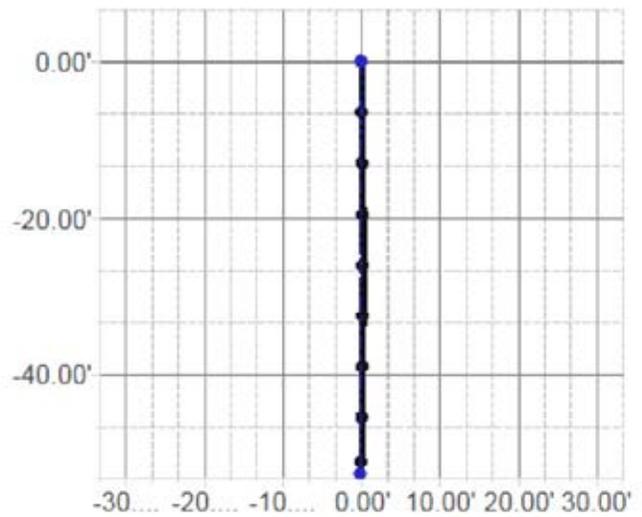
Calibration Angle: 180.00°

End Deviation 2.18'

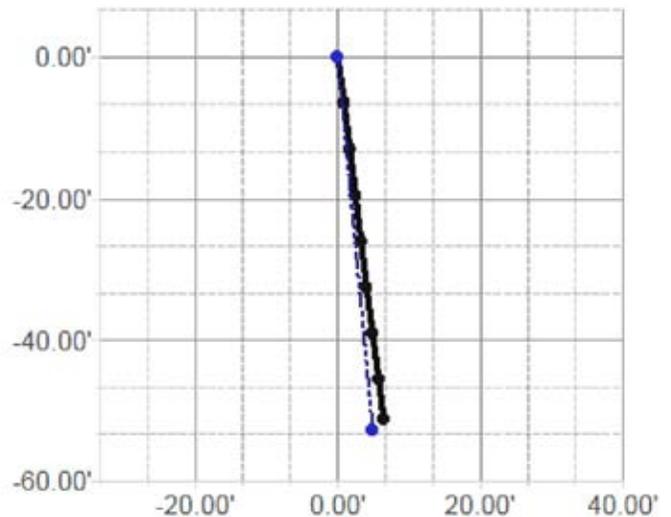
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Side



	AZ	INC	Length	DEV	DEV %	Elevation
●	5.5°	7.8°	6.56'	0.30'	4.54%	-6.50'
●	5.9°	7.3°	13.12'	0.54'	4.13%	-13.01'
●	5.2°	6.8°	19.69'	0.72'	3.65%	-19.52'
●	2.8°	6.6°	26.25'	0.87'	3.32%	-26.04'
●	360.0°	7.0°	32.81'	1.05'	3.21%	-32.56'
●	357.5°	7.3°	39.37'	1.27'	3.22%	-39.06'
●	359.1°	7.4°	45.93'	1.50'	3.26%	-45.57'
●	353.0°	6.9°	51.59'	1.64'	3.18%	-51.19'

# Deployment Report

## R2-H07

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 15:18

	Inclination	Azimuth	Length	Depth
Measured	12.01°	6.30°	45.93'	-44.92'
Planned	10.40°	0.00°	53.00'	-52.13'
Deviation	1.61°	6.30°	7.07'	7.21'

	Easting	Northing	Elevation
Collar	0.00'	6.00'	0.00'
Measured End	1.05'	15.50'	-44.92'
Designed End	0.00'	15.57'	-52.13'

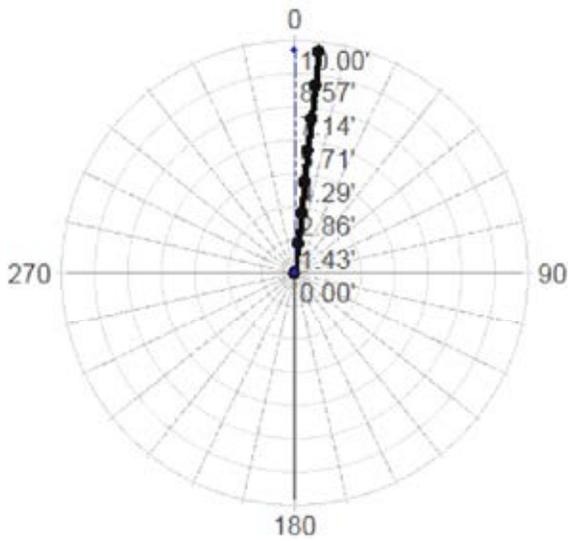
Alignment Name: Alignment 16:13

Alignment Time: 15:13:13

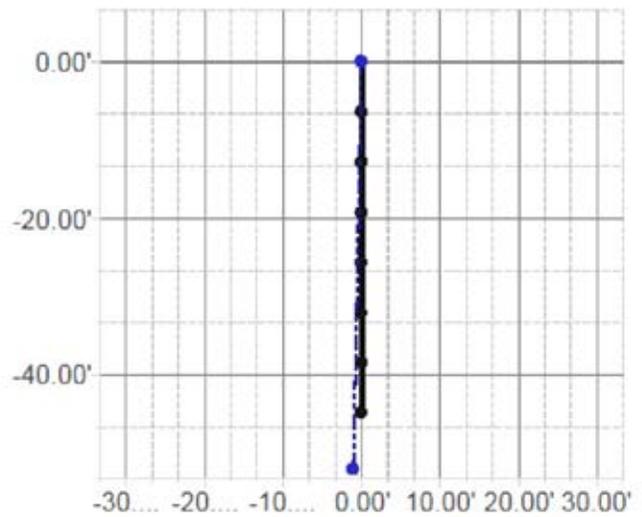
Calibration Angle: 180.00°

End Deviation 7.28'

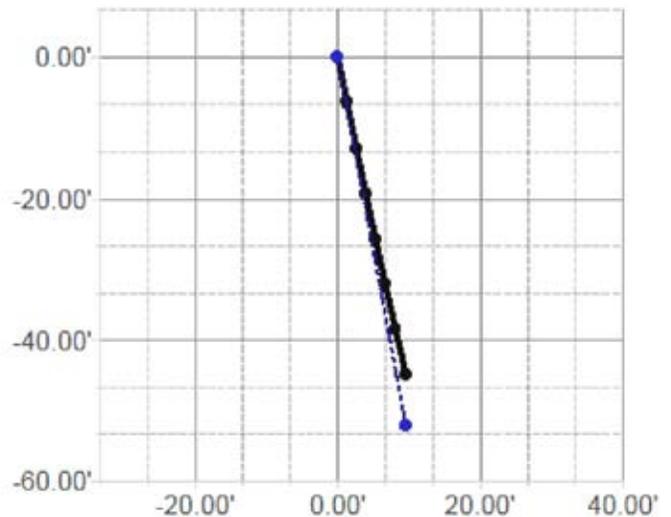
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Side



	AZ	INC	Length	DEV	DEV %	Elevation
●	7.7°	11.4°	6.56'	0.20'	3.06%	-6.43'
●	6.5°	11.5°	13.12'	0.39'	2.96%	-12.86'
●	4.8°	11.7°	19.69'	0.56'	2.86%	-19.29'
●	5.8°	11.9°	26.25'	0.78'	2.96%	-25.71'
●	7.2°	12.1°	32.81'	1.03'	3.14%	-32.12'
●	6.3°	12.6°	39.37'	1.31'	3.32%	-38.53'
●	5.8°	13.0°	45.93'	1.62'	3.53%	-44.92'

# Deployment Report

R2-H08 

Surveyor Rsibley  
 Project 2345-262  
 Survey Date 2025-07-27 15:20

	Inclination	Azimuth	Length	Depth
Measured	16.40°	0.05°	45.93'	-44.06'
Planned	15.80°	0.00°	55.00'	-52.92'
Deviation	0.60°	0.05°	9.07'	8.86'

	Easting	Northing	Elevation
Collar	0.00'	7.00'	0.00'
Measured End	0.01'	19.97'	-44.06'
Designed End	0.00'	21.98'	-52.92'

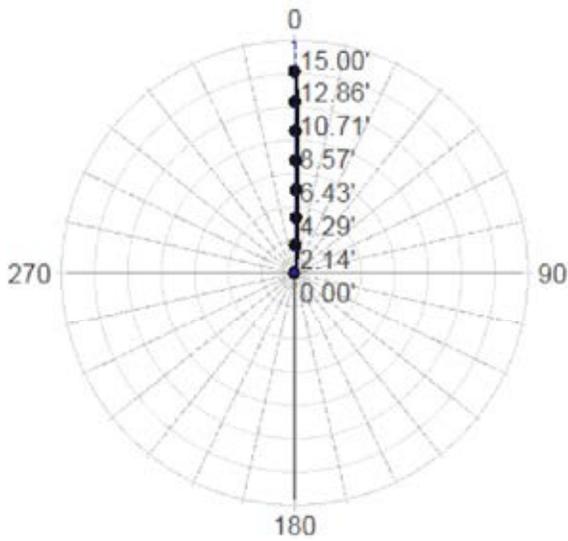
Alignment Name: Alignment 16:13

Alignment Time: 15:13:13

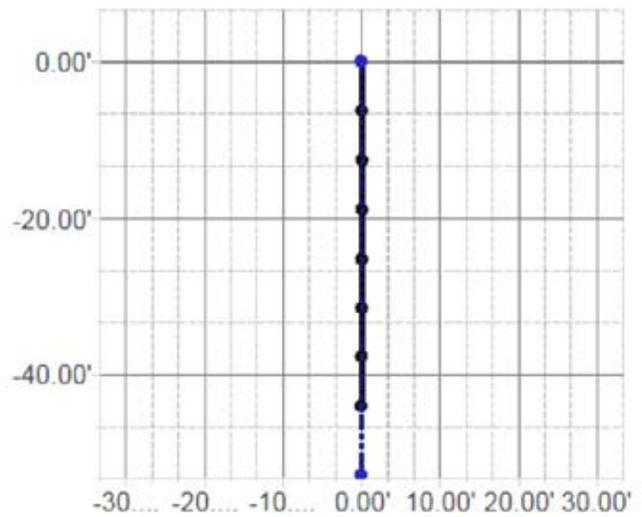
Calibration Angle: 180.00°

End Deviation 9.09'

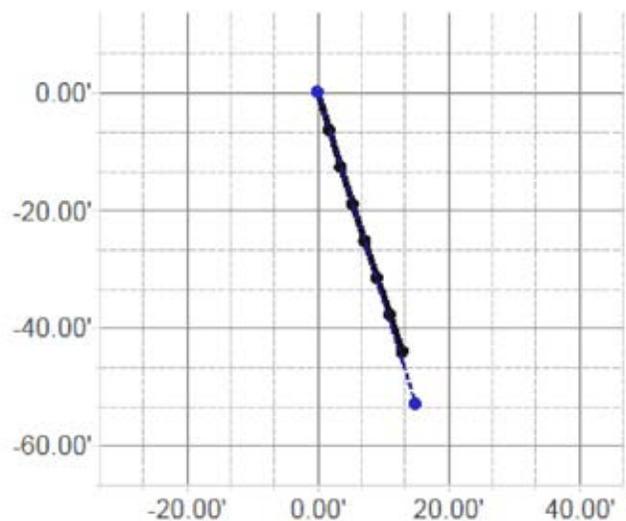
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	AZ	INC	Length	DEV	DEV %	Elevation
●	2.9°	15.7°	6.56'	0.09'	1.37%	-6.32'
●	1.1°	15.5°	13.12'	0.13'	0.99%	-12.64'
●	359.8°	16.0°	19.69'	0.12'	0.60%	-18.95'
●	359.6°	16.8°	26.25'	0.14'	0.52%	-25.23'
●	359.8°	16.8°	32.81'	0.22'	0.67%	-31.51'
●	359.2°	16.8°	39.37'	0.33'	0.83%	-37.79'
●	358.3°	17.2°	45.93'	0.48'	1.05%	-44.06'



# Deployment Report

## R3-H01



Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 15:30

	Inclination	Azimuth	Length	Depth
Measured	22.03°	181.79°	44.93'	-41.65'
Planned	23.20°	180.00°	45.00'	-41.36'
Deviation	1.17°	1.79°	0.07'	0.29'

	Easting	Northing	Elevation
Collar	6.00'	0.00'	0.00'
Measured End	5.47'	-16.84'	-41.65'
Designed End	6.00'	-17.73'	-41.36'

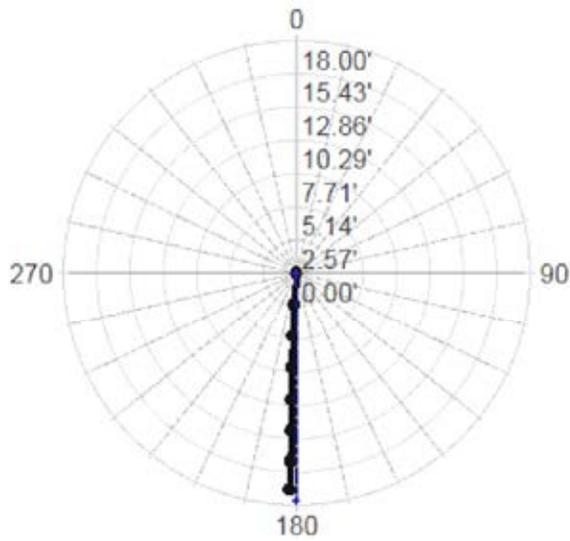
Alignment Name: Alignment 16:29

Alignment Time: 15:29:54

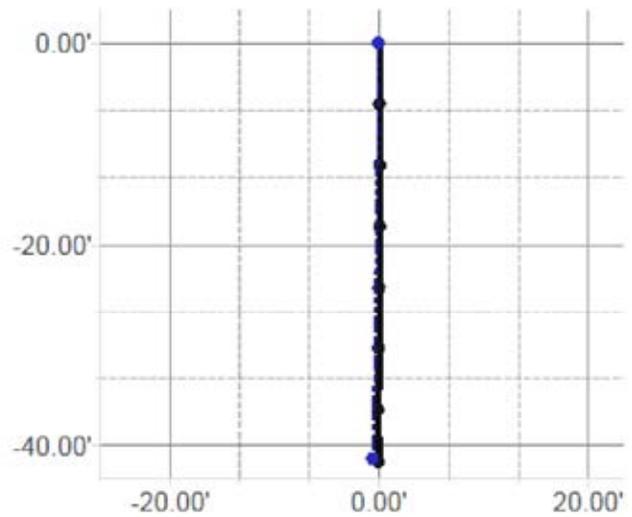
Calibration Angle: 180.00°

End Deviation 1.07'

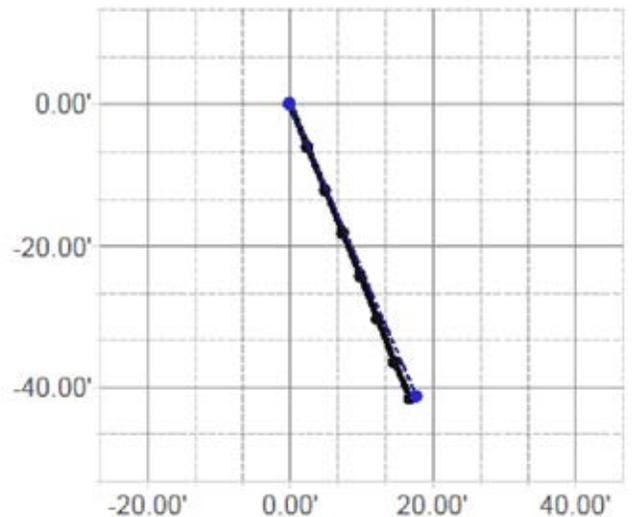
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	AZ	INC	Length	DEV	DEV %	Elevation
●	183.7°	22.2°	6.56'	0.20'	3.07%	-6.08'
●	182.7°	22.2°	13.12'	0.37'	2.79%	-12.15'
●	181.3°	22.1°	19.69'	0.49'	2.51%	-18.23'
●	181.0°	21.9°	26.25'	0.64'	2.42%	-24.32'
●	180.5°	21.5°	32.81'	0.81'	2.46%	-30.42'
●	180.8°	21.2°	39.37'	1.02'	2.60%	-36.54'
●	182.5°	23.2°	44.93'	1.06'	2.37%	-41.65'

# Deployment Report

## R3-H02

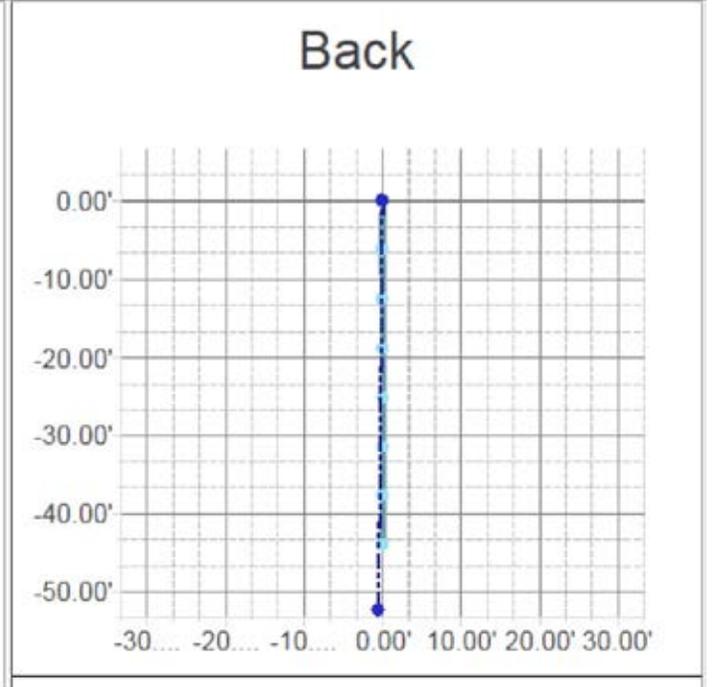
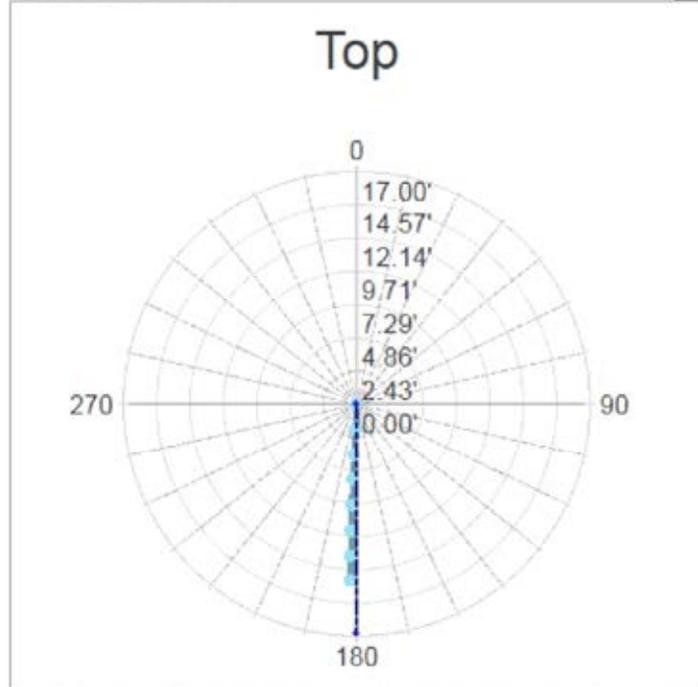
Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 15:32

	Inclination	Azimuth	Length	Depth
Measured	16.46°	181.81°	45.93'	-44.05'
Planned	17.80°	180.00°	55.00'	-52.37'
Deviation	1.34°	1.81°	9.07'	8.32'

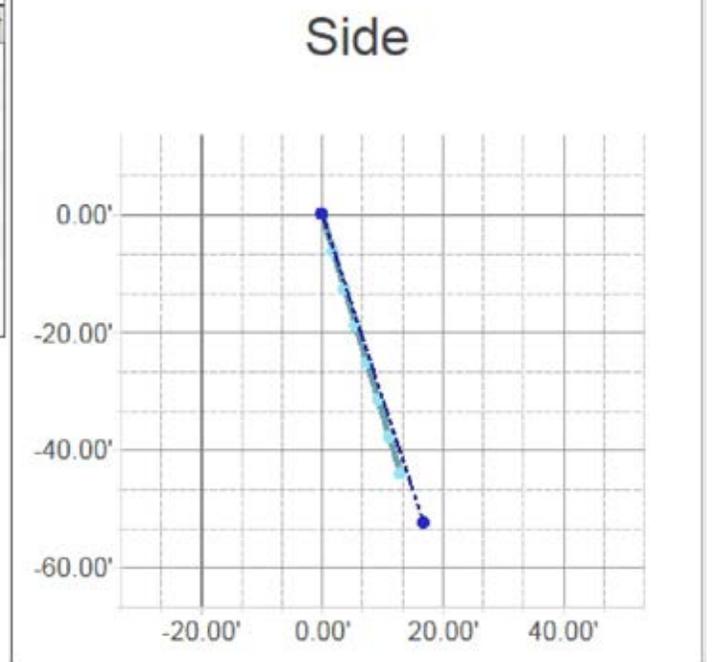
	Easting	Northing	Elevation
Collar	6.00'	1.00'	0.00'
Measured End	5.59'	-12.01'	-44.05'
Designed End	6.00'	-15.81'	-52.37'

Alignment Name: Alignment 16:29  
 Alignment Time: 15:29:54      Calibration Angle: 180.00°

End Deviation 9.16'



	AZ	INC	Length	DEV	DEV %	Elevation
●	181.2°	16.6°	6.56'	0.15'	2.22%	-6.29'
●	182.8°	16.6°	13.12'	0.31'	2.39%	-12.58'
●	183.3°	16.4°	19.69'	0.50'	2.56%	-18.87'
●	182.4°	16.6°	26.25'	0.67'	2.54%	-25.16'
●	181.8°	16.6°	32.81'	0.82'	2.50%	-31.45'
●	180.8°	16.3°	39.37'	0.98'	2.50%	-37.75'
●	180.3°	16.2°	45.93'	1.16'	2.52%	-44.05'



# Deployment Report

## R3-H03

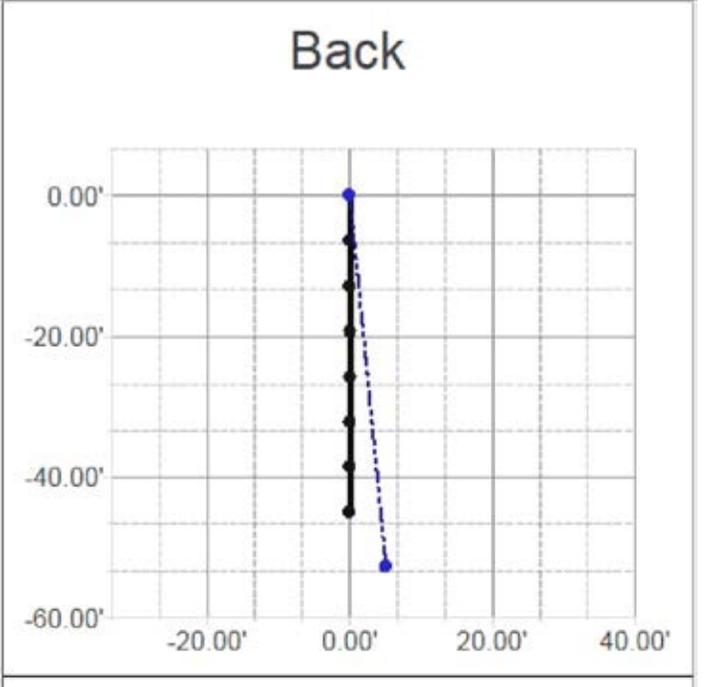
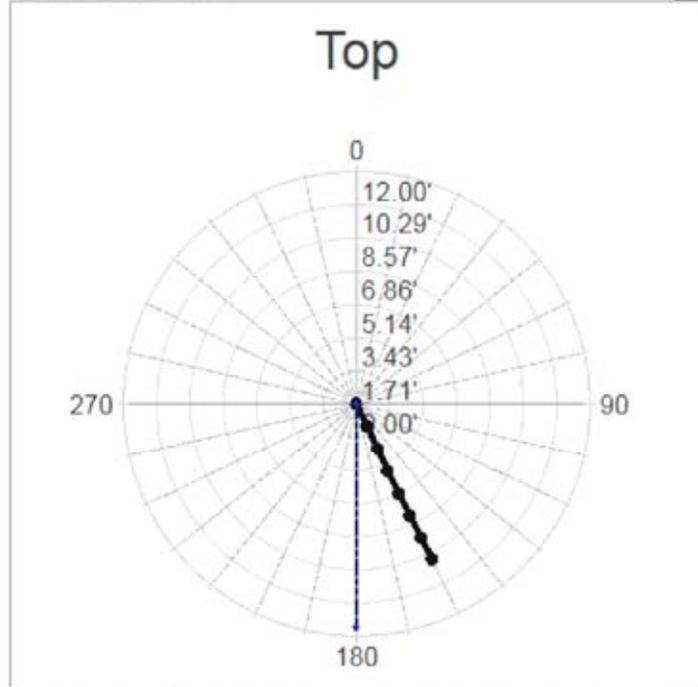
Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 15:34

	Inclination	Azimuth	Length	Depth
Measured	11.28°	154.11°	45.93'	-45.04'
Planned	12.40°	180.00°	54.00'	-52.74'
Deviation	1.12°	25.89°	8.07'	7.70'

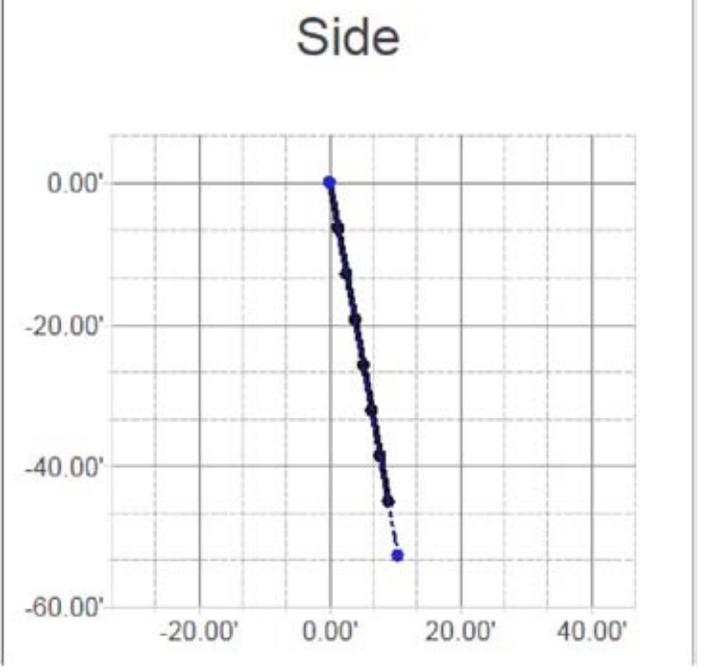
	Easting	Northing	Elevation
Collar	6.00'	2.00'	0.00'
Measured End	9.92'	-6.08'	-45.04'
Designed End	6.00'	-9.60'	-52.74'

Alignment Name: Alignment 16:29  
 Alignment Time: 15:29:54      Calibration Angle: 180.00°

End Deviation 9.33'



	AZ	INC	Length	DEV	DEV %	Elevation
●	154.5°	11.5°	6.56'	0.61'	9.26%	-6.43'
●	155.3°	11.4°	13.12'	1.20'	9.11%	-12.86'
●	155.9°	11.3°	19.69'	1.77'	9.00%	-19.30'
●	154.4°	11.4°	26.25'	2.38'	9.06%	-25.73'
●	153.4°	11.3°	32.81'	3.01'	9.18%	-32.17'
●	152.9°	11.2°	39.37'	3.65'	9.28%	-38.60'
●	152.3°	11.0°	45.93'	4.31'	9.38%	-45.04'



# Deployment Report

## R3-H04

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 15:36

	Inclination	Azimuth	Length	Depth
Measured	5.29°	159.96°	45.93'	-45.73'
Planned	6.90°	180.00°	53.00'	-52.62'
Deviation	1.61°	20.04°	7.07'	6.88'

	Easting	Northing	Elevation
Collar	6.00'	3.00'	0.00'
Measured End	7.45'	-0.98'	-45.73'
Designed End	6.00'	-3.37'	-52.62'

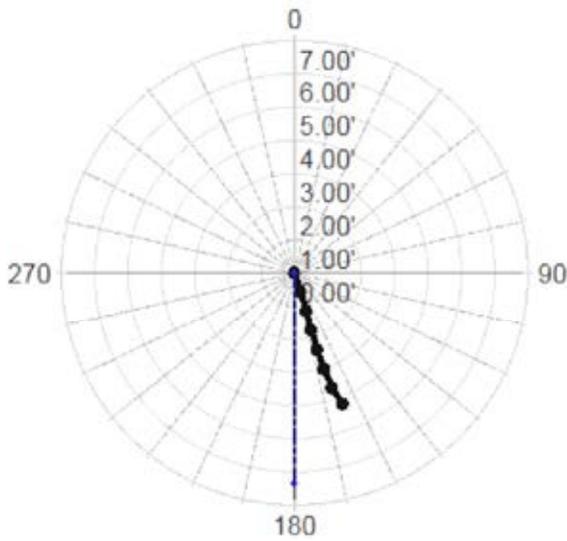
Alignment Name: Alignment 16:29

Alignment Time: 15:29:54

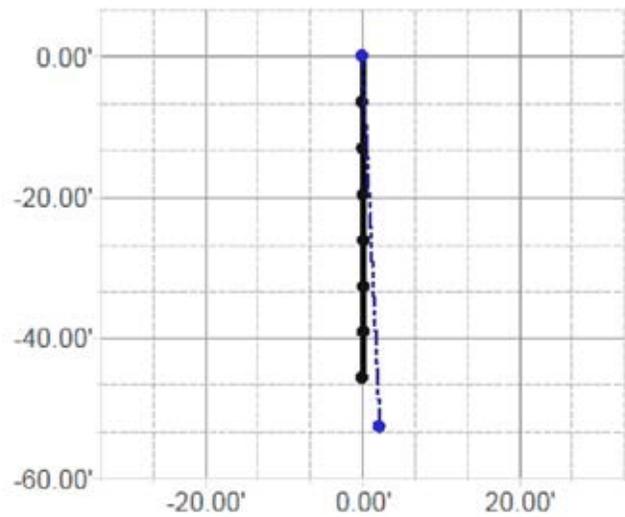
Calibration Angle: 180.00°

End Deviation 7.43'

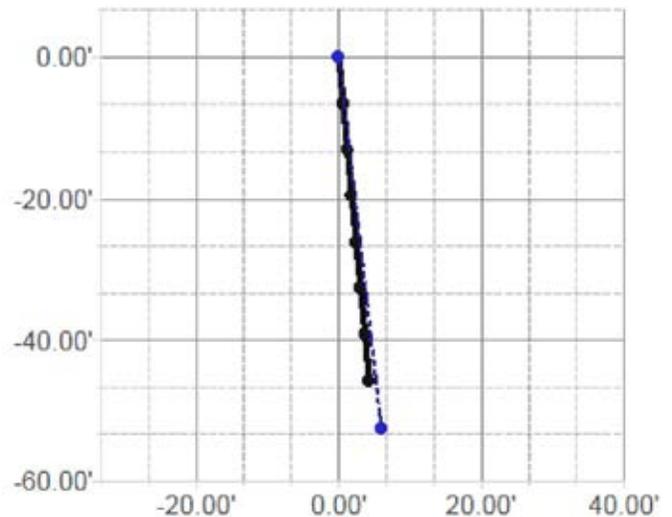
### Top



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### Side



	AZ	INC	Length	DEV	DEV %	Elevation
●	162.0°	5.4°	6.56'	0.28'	4.26%	-6.53'
●	163.6°	5.3°	13.12'	0.55'	4.20%	-13.07'
●	166.1°	5.4°	19.69'	0.79'	4.03%	-19.60'
●	163.4°	5.4°	26.25'	1.06'	4.04%	-26.13'
●	160.5°	5.4°	32.81'	1.35'	4.12%	-32.67'
●	156.7°	5.5°	39.37'	1.68'	4.26%	-39.20'
●	146.5°	5.0°	45.93'	2.12'	4.62%	-45.73'

# Deployment Report

## R3-H05

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 15:39

	Inclination	Azimuth	Length	Depth
Measured	1.79°	323.22°	50.79'	-50.77'
Planned	0.90°	0.00°	52.00'	-51.99'
Deviation	0.89°	36.78°	1.21'	1.23'

	Easting	Northing	Elevation
Collar	6.00'	4.00'	0.00'
Measured End	5.05'	5.27'	-50.77'
Designed End	6.00'	4.82'	-51.99'

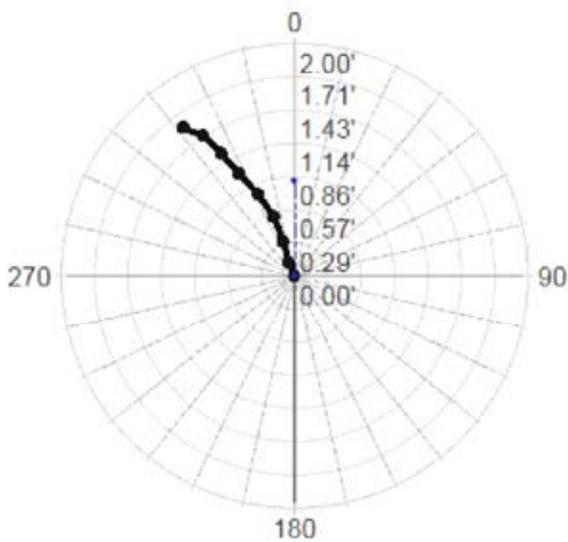
Alignment Name: Alignment 16:38

Alignment Time: 15:38:42

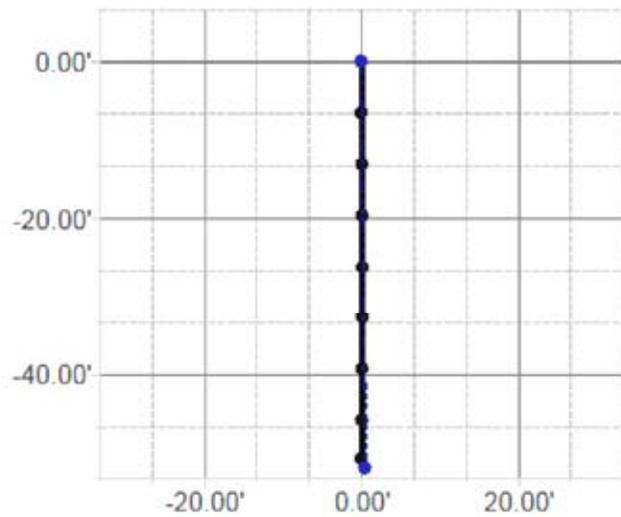
Calibration Angle: 180.00°

End Deviation 1.62'

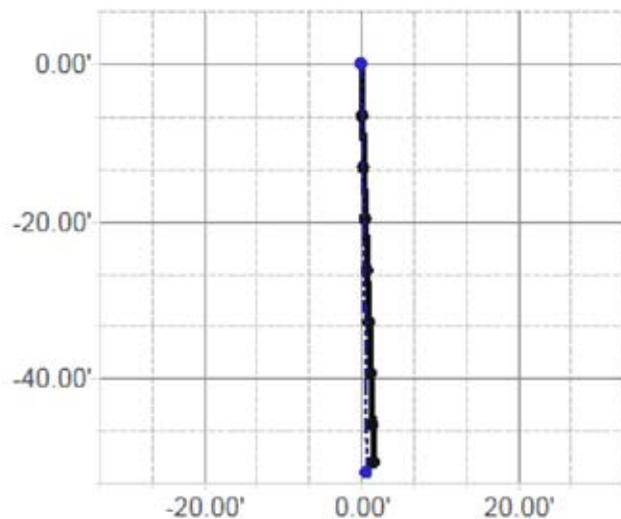
### Top



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### Side



	AZ	INC	Length	DEV	DEV %	Elevation
●	338.0°	1.1°	6.56'	0.05'	0.74%	-6.56'
●	344.9°	1.6°	13.12'	0.13'	0.97%	-13.12'
●	339.3°	2.0°	19.69'	0.26'	1.33%	-19.68'
●	325.6°	2.0°	26.25'	0.42'	1.59%	-26.23'
●	317.1°	2.2°	32.81'	0.60'	1.82%	-32.79'
●	319.1°	2.0°	39.37'	0.76'	1.93%	-39.35'
●	314.8°	1.9°	45.93'	0.92'	2.00%	-45.91'
●	291.6°	2.2°	50.79'	1.06'	2.10%	-50.77'

# Deployment Report

R3-H06 

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 15:42

	Inclination	Azimuth	Length	Depth
Measured	5.45°	9.73°	45.93'	-45.72'
Planned	4.10°	0.00°	52.00'	-51.87'
Deviation	1.35°	9.73°	6.07'	6.15'

	Easting	Northing	Elevation
Collar	6.00'	5.00'	0.00'
Measured End	6.74'	9.30'	-45.72'
Designed End	6.00'	8.72'	-51.87'

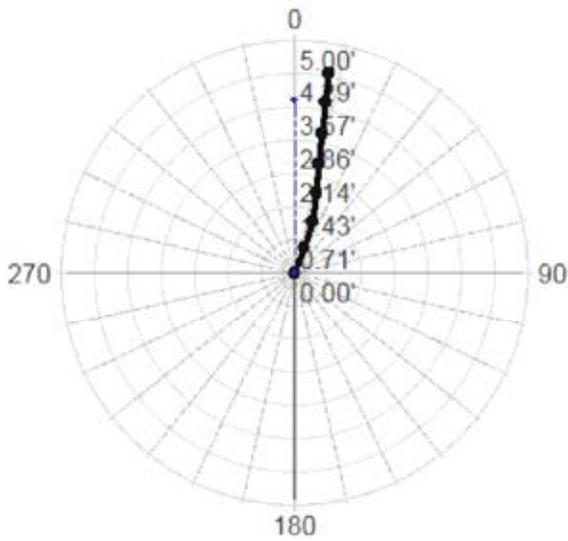
Alignment Name: Alignment 16:38

Alignment Time: 15:38:42

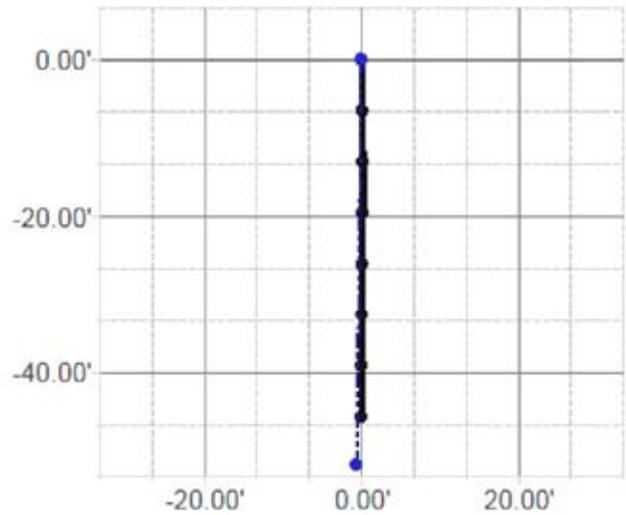
Calibration Angle: 180.00°

End Deviation 6.22'

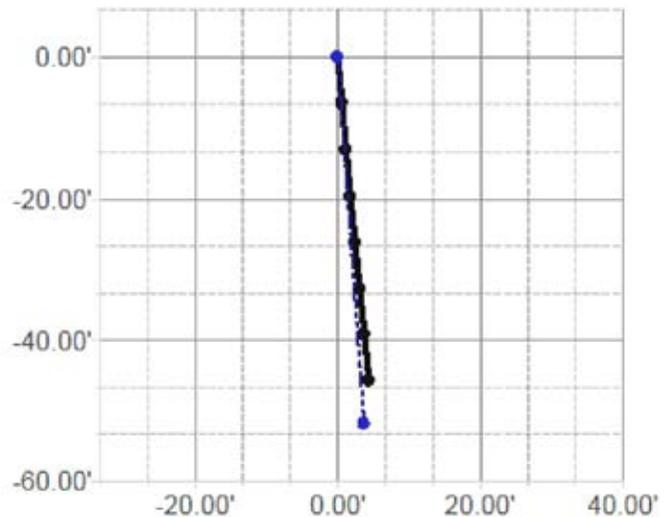
Top



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	AZ	INC	Length	DEV	DEV %	Elevation
●	20.8°	5.1°	6.56'	0.22'	3.35%	-6.54'
●	17.7°	5.2°	13.12'	0.43'	3.24%	-13.07'
●	8.3°	5.4°	19.69'	0.57'	2.90%	-19.60'
●	3.4°	5.5°	26.25'	0.69'	2.65%	-26.14'
●	6.8°	5.8°	32.81'	0.89'	2.70%	-32.66'
●	7.2°	5.8°	39.37'	1.09'	2.76%	-39.19'
●	5.6°	5.6°	45.93'	1.26'	2.74%	-45.72'

# Deployment Report

R3-H07 

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 15:44

	Inclination	Azimuth	Length	Depth
Measured	10.72°	3.62°	45.93'	-45.13'
Planned	9.40°	0.00°	53.00'	-52.29'
Deviation	1.32°	3.62°	7.07'	7.16'

	Easting	Northing	Elevation
Collar	6.00'	6.00'	0.00'
Measured End	6.54'	14.53'	-45.13'
Designed End	6.00'	14.66'	-52.29'

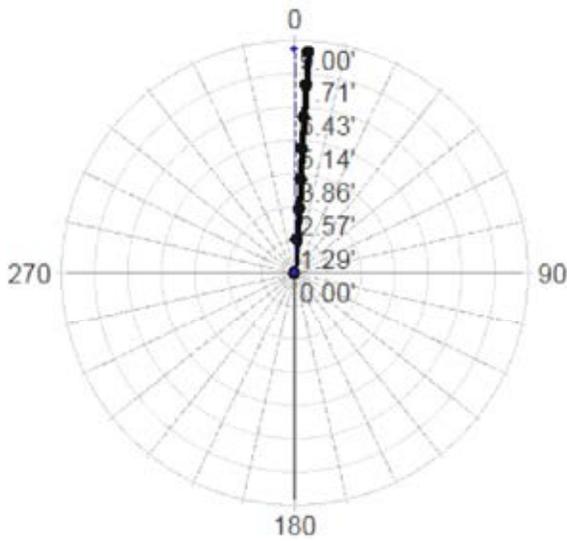
Alignment Name: Alignment 16:38

Alignment Time: 15:38:42

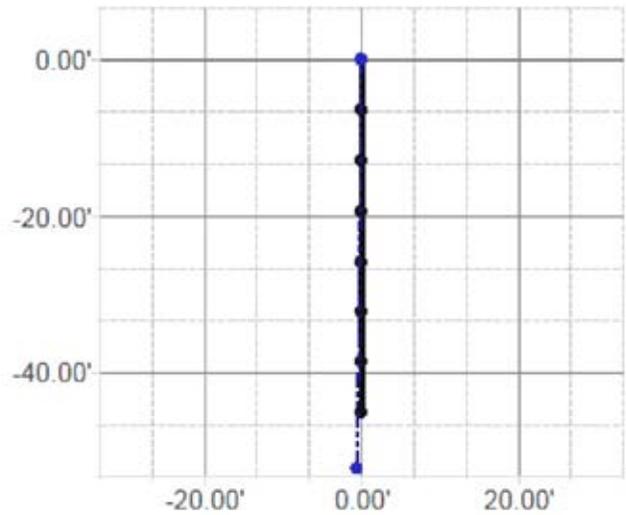
Calibration Angle: 180.00°

End Deviation 7.18'

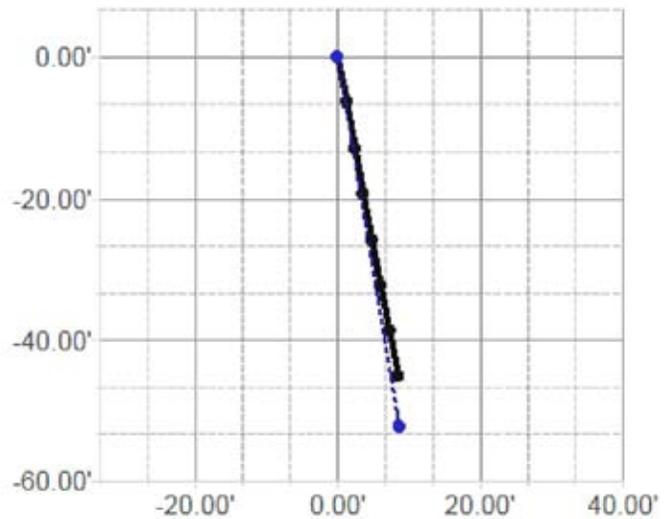
Top



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	AZ	INC	Length	DEV	DEV %	Elevation
●	4.7°	11.5°	6.56'	0.26'	3.95%	-6.43'
●	4.1°	10.3°	13.12'	0.39'	2.97%	-12.89'
●	2.9°	9.9°	19.69'	0.47'	2.36%	-19.35'
●	2.1°	10.5°	26.25'	0.60'	2.29%	-25.80'
●	3.7°	10.8°	32.81'	0.77'	2.36%	-32.25'
●	4.1°	10.9°	39.37'	0.96'	2.44%	-38.69'
●	3.5°	11.2°	45.93'	1.18'	2.56%	-45.13'

# Deployment Report

## R3-H08

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 15:46

	Inclination	Azimuth	Length	Depth
Measured	17.09°	1.03°	45.93'	-43.90'
Planned	14.70°	0.00°	54.00'	-52.23'
Deviation	2.39°	1.03°	8.07'	8.34'

	Easting	Northing	Elevation
Collar	6.00'	7.00'	0.00'
Measured End	6.24'	20.49'	-43.90'
Designed End	6.00'	20.70'	-52.23'

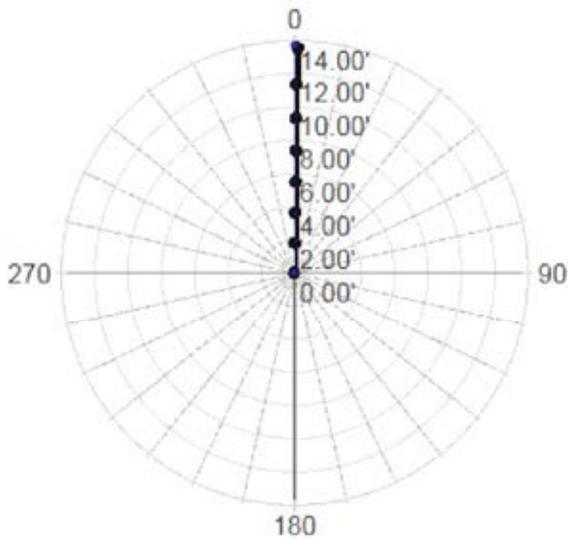
Alignment Name: Alignment 16:38

Alignment Time: 15:38:42

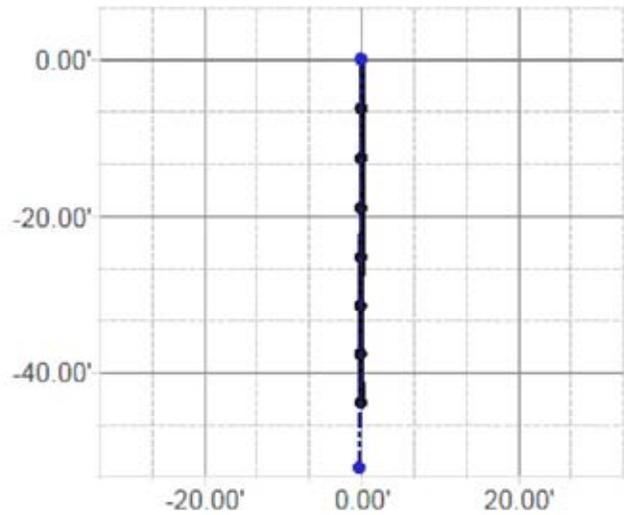
Calibration Angle: 180.00°

End Deviation 8.34'

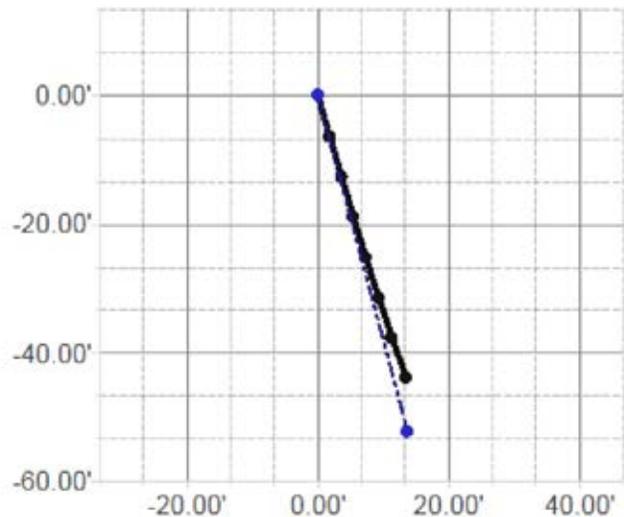
Top



Back



Side



	AZ	INC	Length	DEV	DEV %	Elevation
●	1.6°	15.9°	6.56'	0.15'	2.29%	-6.31'
●	0.8°	16.0°	13.12'	0.30'	2.30%	-12.62'
●	0.9°	16.3°	19.69'	0.49'	2.47%	-18.91'
●	0.5°	16.7°	26.25'	0.72'	2.73%	-25.20'
●	359.8°	17.4°	32.81'	1.02'	3.11%	-31.46'
●	0.8°	18.2°	39.37'	1.42'	3.61%	-37.69'
●	2.7°	19.1°	45.93'	1.93'	4.19%	-43.90'

# Deployment Report

R3-H09 

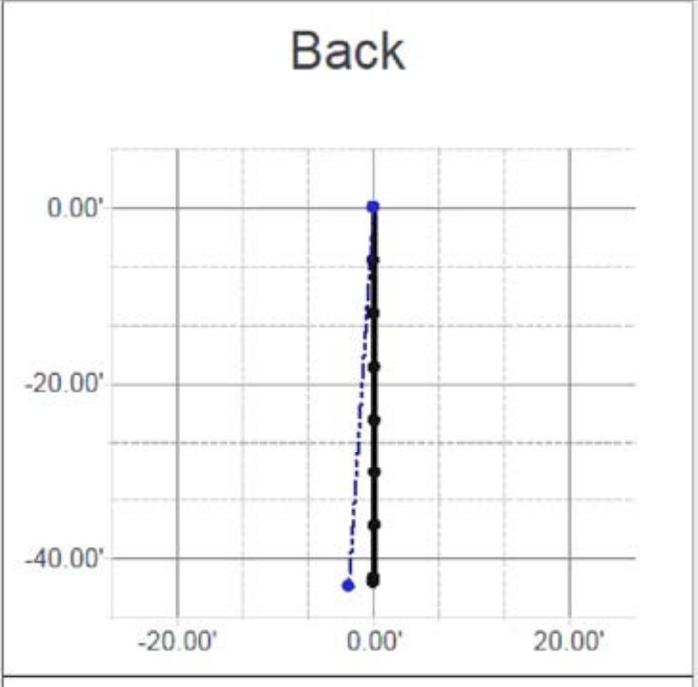
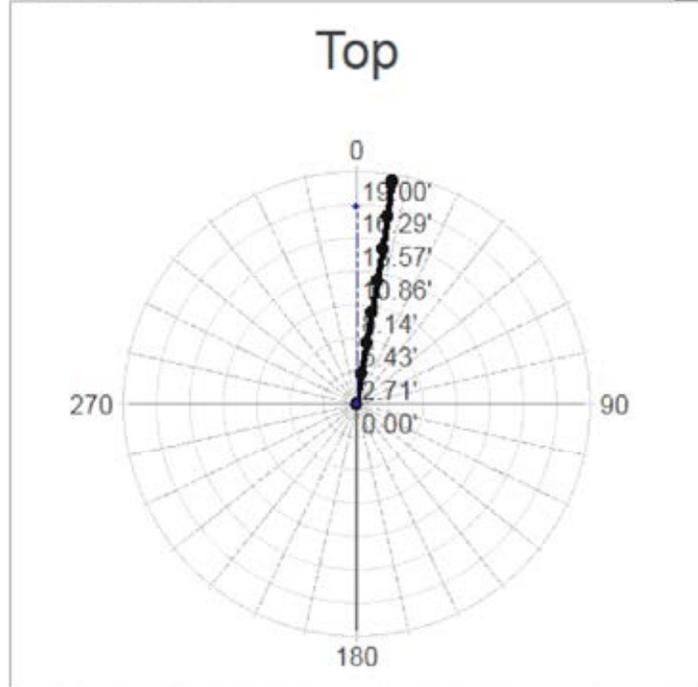
Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 15:50

	Inclination	Azimuth	Length	Depth
Measured	23.37°	9.00°	46.49'	-42.67'
Planned	20.50°	0.00°	46.00'	-43.09'
Deviation	2.87°	9.00°	0.49'	0.41'

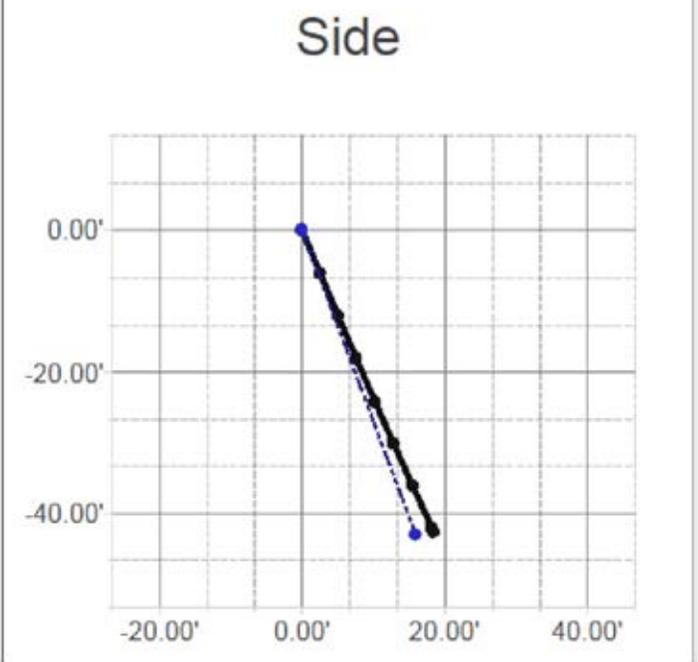
	Easting	Northing	Elevation
Collar	6.00'	8.00'	0.00'
Measured End	8.88'	26.22'	-42.67'
Designed End	6.00'	24.11'	-43.09'

Alignment Name: Alignment 16:38  
 Alignment Time: 15:38:42      Calibration Angle: 180.00°

End Deviation 3.60'



	AZ	INC	Length	DEV	DEV %	Elevation
●	9.2°	22.6°	6.56'	0.45'	6.93%	-6.06'
●	9.6°	22.7°	13.12'	0.93'	7.08%	-12.11'
●	10.1°	23.0°	19.69'	1.44'	7.32%	-18.15'
●	9.7°	23.1°	26.25'	1.95'	7.43%	-24.19'
●	9.5°	23.7°	32.81'	2.49'	7.60%	-30.20'
●	8.7°	24.1°	39.37'	3.04'	7.73%	-36.18'
●	6.6°	24.3°	45.93'	3.53'	7.69%	-42.16'
●	6.0°	24.9°	46.49'	3.60'	7.73%	-42.67'



# Deployment Report

## R4-H01

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 16:37

	Inclination	Azimuth	Length	Depth
Measured	29.10°	176.99°	30.81'	-26.91'
Planned	29.40°	180.00°	35.00'	-30.49'
Deviation	0.30°	3.01°	4.19'	3.58'

	Easting	Northing	Elevation
Collar	12.00'	-1.00'	0.00'
Measured End	12.79'	-15.96'	-26.91'
Designed End	12.00'	-18.18'	-30.49'

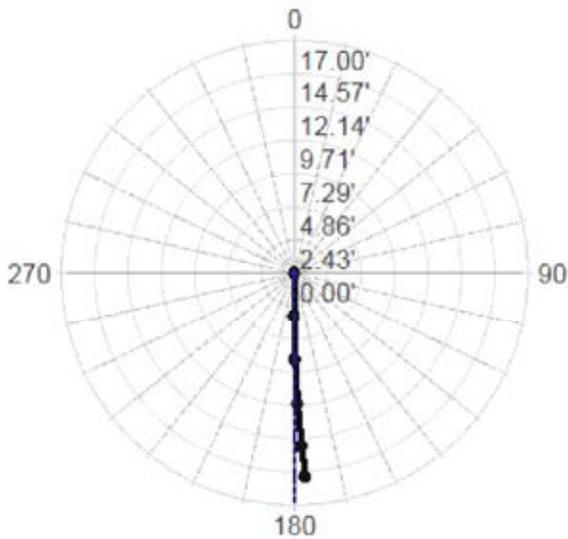
Alignment Name: Alignment 17:33

Alignment Time: 16:33:05

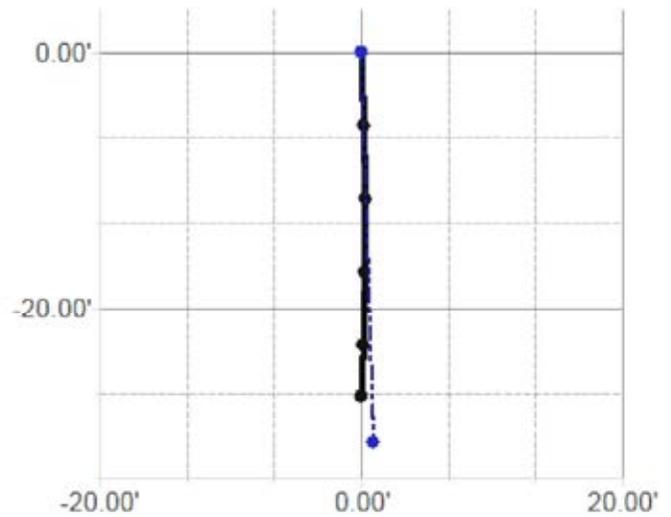
Calibration Angle: 180.00°

End Deviation 4.29'

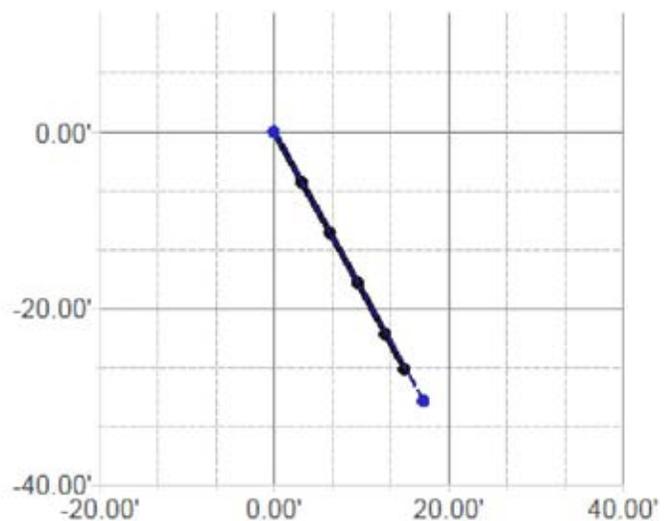
### Top



### Back



### Side



	AZ	INC	Length	DEV	DEV %	Elevation
●	180.2°	29.1°	6.56'	0.03'	0.49%	-5.73'
●	179.2°	29.6°	13.12'	0.04'	0.28%	-11.44'
●	176.4°	29.4°	19.69'	0.24'	1.19%	-17.16'
●	174.7°	28.6°	26.25'	0.54'	2.06%	-22.92'
●	173.2°	28.9°	30.81'	0.81'	2.62%	-26.91'

# Deployment Report

## R4-H02

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 16:36

	Inclination	Azimuth	Length	Depth
Measured	22.61°	180.74°	44.68'	-41.25'
Planned	22.60°	180.00°	47.00'	-43.39'
Deviation	0.01°	0.74°	2.32'	2.14'

	Easting	Northing	Elevation
Collar	12.00'	0.00'	0.00'
Measured End	11.78'	-17.17'	-41.25'
Designed End	12.00'	-18.06'	-43.39'

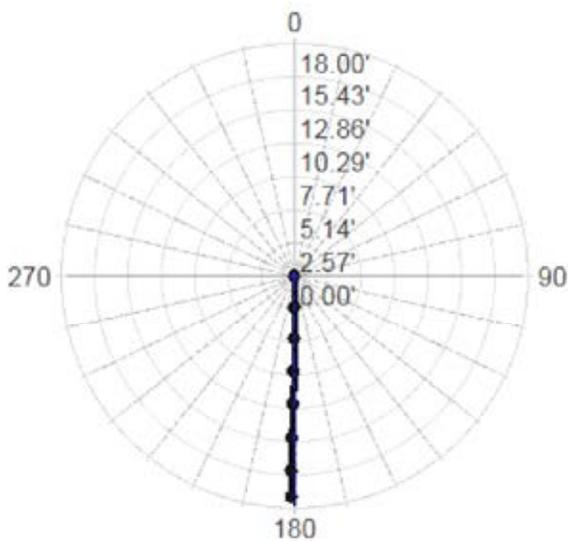
Alignment Name: Alignment 17:33

Alignment Time: 16:33:05

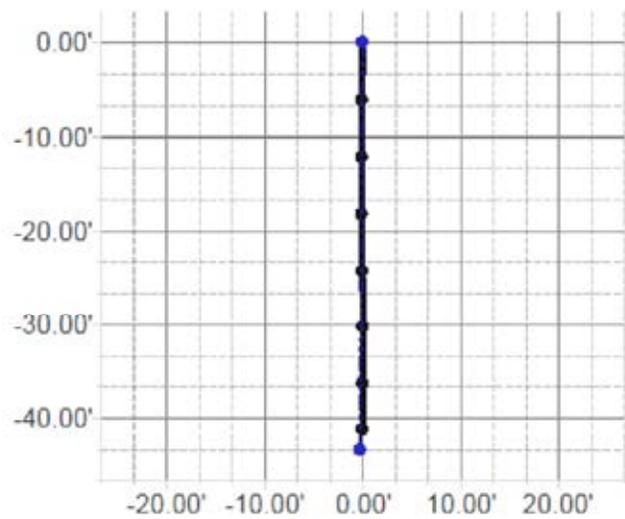
Calibration Angle: 180.00°

End Deviation 2.33'

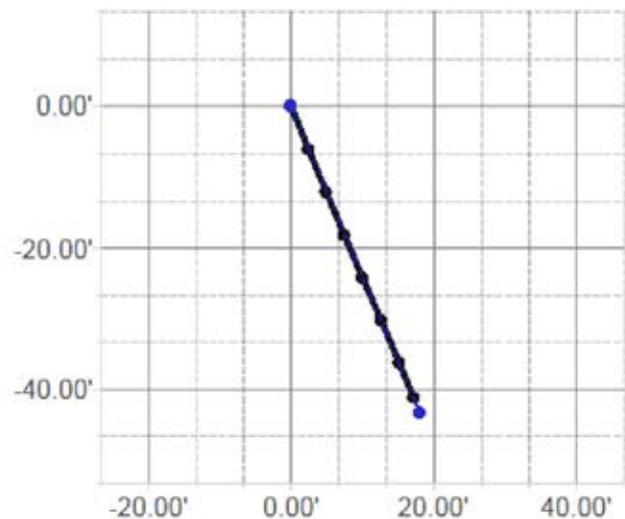
### Top



### Back



### Side



	AZ	INC	Length	DEV	DEV %	Elevation
●	179.8°	21.9°	6.56'	0.08'	1.17%	-6.09'
●	180.2°	22.3°	13.12'	0.11'	0.84%	-12.16'
●	180.5°	22.6°	19.69'	0.11'	0.56%	-18.21'
●	181.7°	22.9°	26.25'	0.13'	0.48%	-24.26'
●	182.5°	23.4°	32.81'	0.22'	0.66%	-30.28'
●	180.5°	22.7°	39.37'	0.24'	0.60%	-36.33'
●	179.7°	22.4°	44.68'	0.22'	0.50%	-41.25'

# Deployment Report

## R4-H03

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 16:34

	Inclination	Azimuth	Length	Depth
Measured	16.82°	175.28°	45.93'	-43.96'
Planned	16.30°	180.00°	53.00'	-50.87'
Deviation	0.52°	4.72°	7.07'	6.91'

	Easting	Northing	Elevation
Collar	12.00'	1.00'	0.00'
Measured End	13.09'	-12.24'	-43.96'
Designed End	12.00'	-13.88'	-50.87'

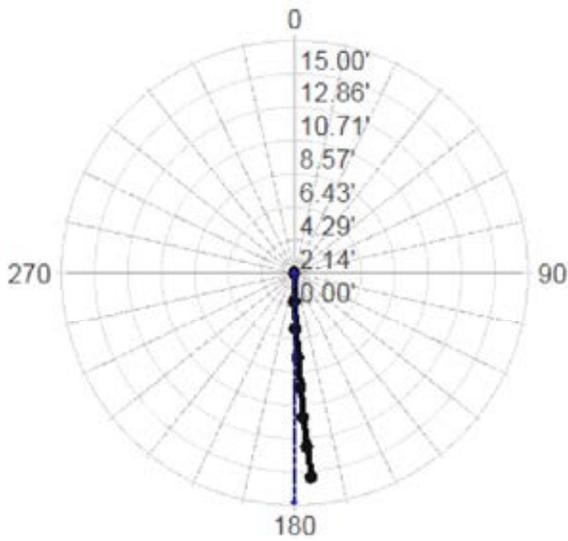
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Alignment Time: 16:33:05

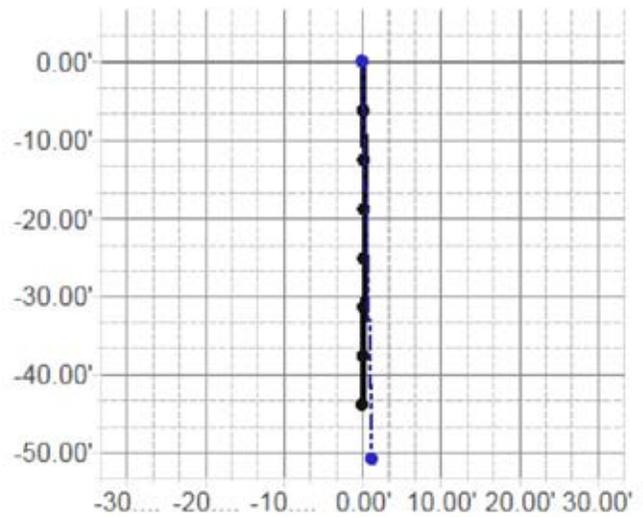
Calibration Angle: 180.00°

End Deviation 7.18'

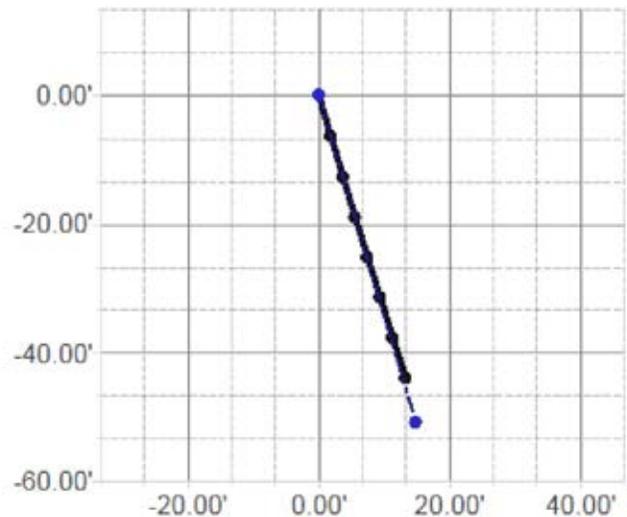
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	AZ	INC	Length	DEV	DEV %	Elevation
●	179.6°	16.4°	6.56'	0.02'	0.29%	-6.29'
●	177.8°	16.3°	13.12'	0.09'	0.66%	-12.59'
●	175.1°	16.5°	19.69'	0.25'	1.24%	-18.88'
●	175.1°	16.9°	26.25'	0.42'	1.59%	-25.16'
●	174.9°	17.1°	32.81'	0.60'	1.84%	-31.43'
●	172.8°	17.3°	39.37'	0.87'	2.20%	-37.70'
●	172.0°	17.3°	45.93'	1.16'	2.52%	-43.96'

# Deployment Report

## R4-H04

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 16:30

	Inclination	Azimuth	Length	Depth
Measured	9.97°	155.29°	45.93'	-45.24'
Planned	10.60°	180.00°	52.00'	-51.11'
Deviation	0.63°	24.71°	6.07'	5.88'

	Easting	Northing	Elevation
Collar	12.00'	2.00'	0.00'
Measured End	15.32'	-5.23'	-45.24'
Designed End	12.00'	-7.57'	-51.11'

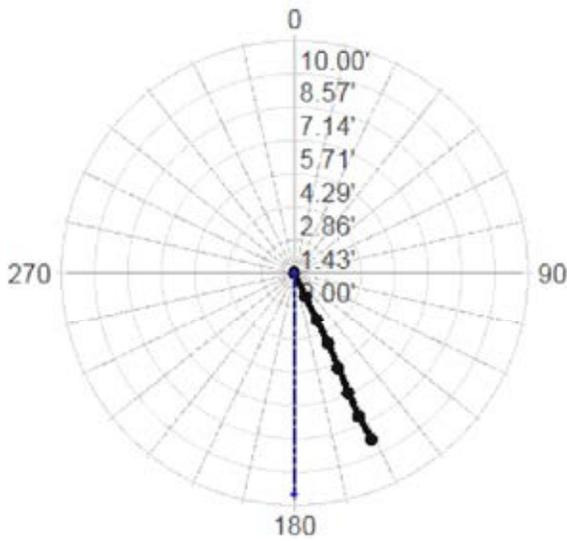
Alignment Name: Alignment 17:06

Alignment Time: 16:06:36

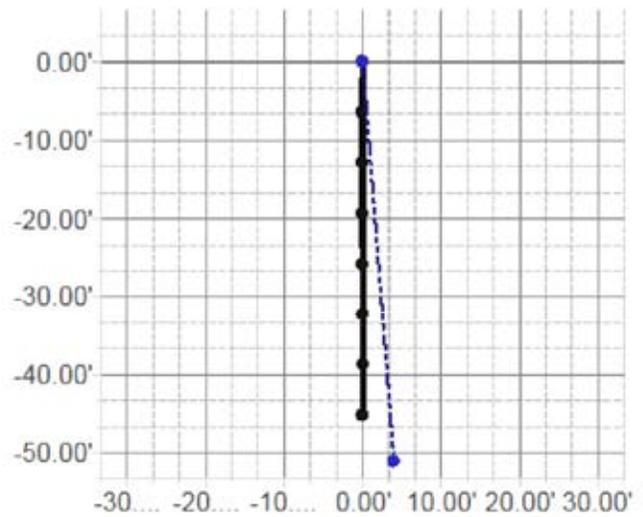
Calibration Angle: 180.00°

End Deviation 7.15'

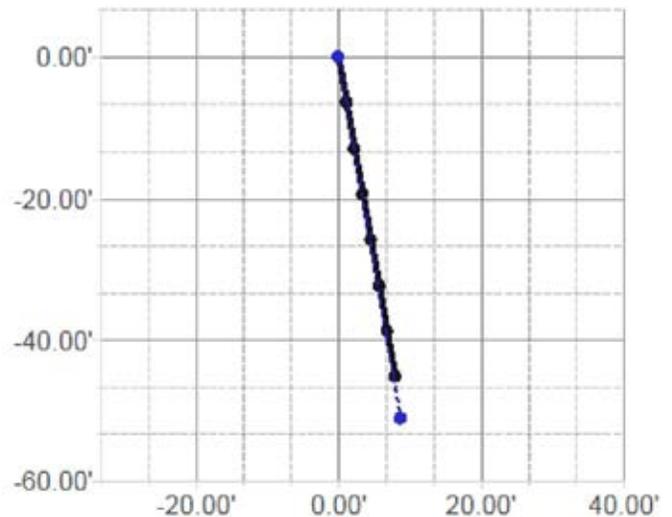
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	AZ	INC	Length	DEV	DEV %	Elevation
●	154.9°	10.0°	6.56'	0.51'	7.83%	-6.46'
●	154.6°	9.9°	13.12'	1.03'	7.87%	-12.93'
●	154.9°	9.9°	19.69'	1.55'	7.85%	-19.39'
●	157.2°	10.1°	26.25'	2.02'	7.68%	-25.85'
●	158.3°	10.0°	32.81'	2.46'	7.50%	-32.31'
●	156.4°	9.7°	39.37'	2.94'	7.48%	-38.78'
●	150.8°	10.1°	45.93'	3.54'	7.71%	-45.24'

# Deployment Report

## R4-H05

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 16:28

	Inclination	Azimuth	Length	Depth
Measured	3.90°	161.58°	52.49'	-52.37'
Planned	5.00°	180.00°	51.00'	-50.81'
Deviation	1.10°	18.42°	1.49'	1.56'

	Easting	Northing	Elevation
Collar	12.00'	3.00'	0.00'
Measured End	13.13'	-0.39'	-52.37'
Designed End	12.00'	-1.44'	-50.81'

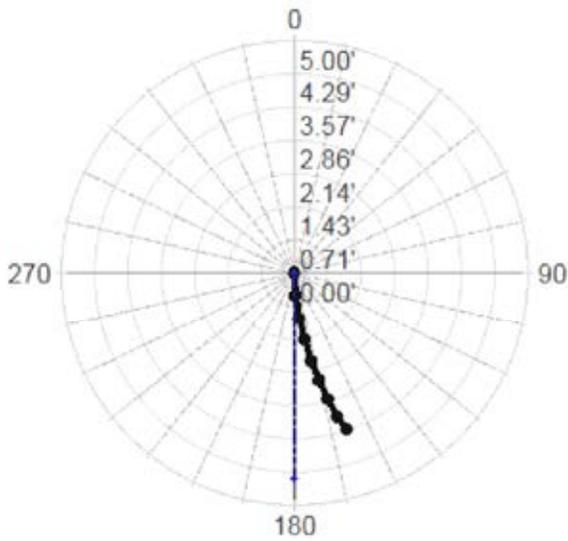
Alignment Name: Alignment 17:06

Alignment Time: 16:06:36

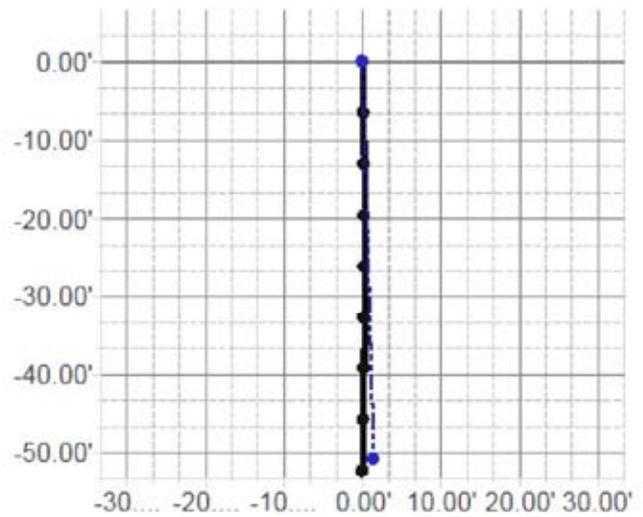
Calibration Angle: 180.00°

End Deviation 2.20'

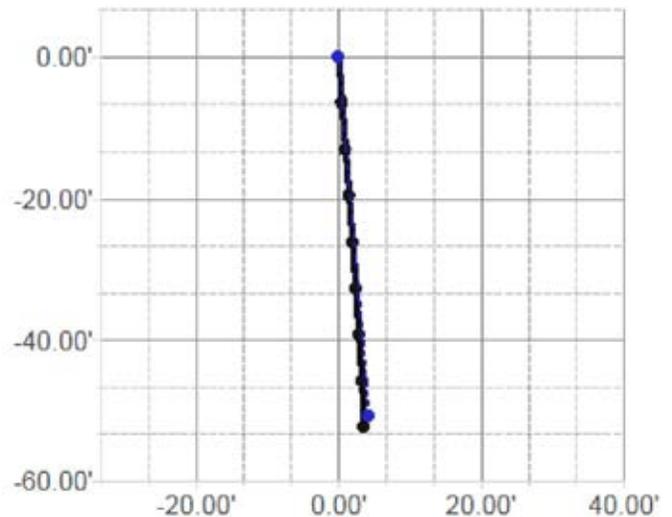
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	AZ	INC	Length	DEV	DEV %	Elevation
●	176.9°	4.4°	6.56'	0.08'	1.21%	-6.54'
●	171.3°	4.3°	13.12'	0.19'	1.43%	-13.09'
●	165.9°	4.3°	19.69'	0.34'	1.70%	-19.63'
●	162.8°	4.1°	26.25'	0.52'	1.98%	-26.17'
●	157.5°	3.9°	32.81'	0.75'	2.29%	-32.72'
●	155.2°	3.9°	39.37'	1.00'	2.55%	-39.27'
●	152.1°	3.7°	45.93'	1.28'	2.79%	-45.81'
●	142.7°	3.0°	52.49'	2.20'	4.19%	-52.37'

# Deployment Report

## R4-H06

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 16:26

	Inclination	Azimuth	Length	Depth
Measured	1.71°	14.79°	51.14'	-51.10'
Planned	0.50°	0.00°	51.00'	-51.00'
Deviation	1.21°	14.79°	0.14'	0.10'

	Easting	Northing	Elevation
Collar	12.00'	4.00'	0.00'
Measured End	12.39'	5.47'	-51.10'
Designed End	12.00'	4.45'	-51.00'

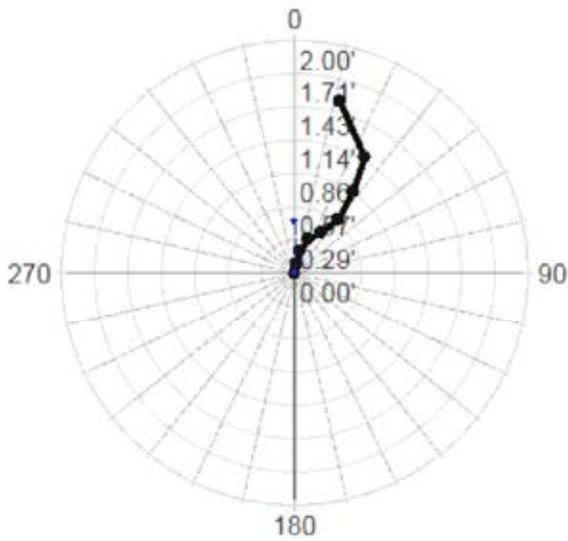
Alignment Name: Alignment 17:06

Alignment Time: 16:06:36

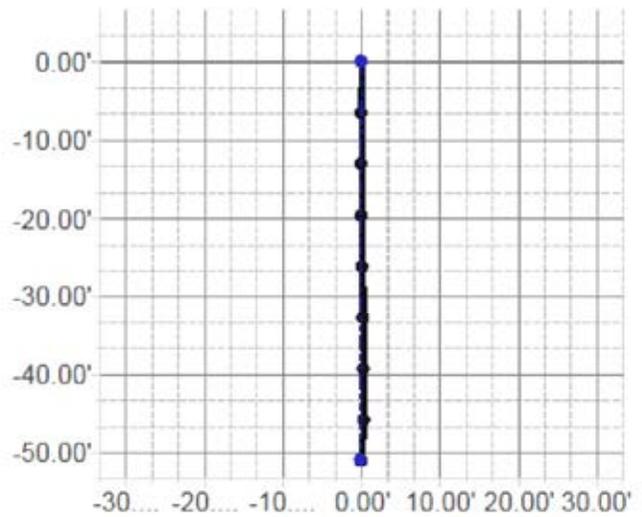
Calibration Angle: 180.00°

End Deviation 1.11'

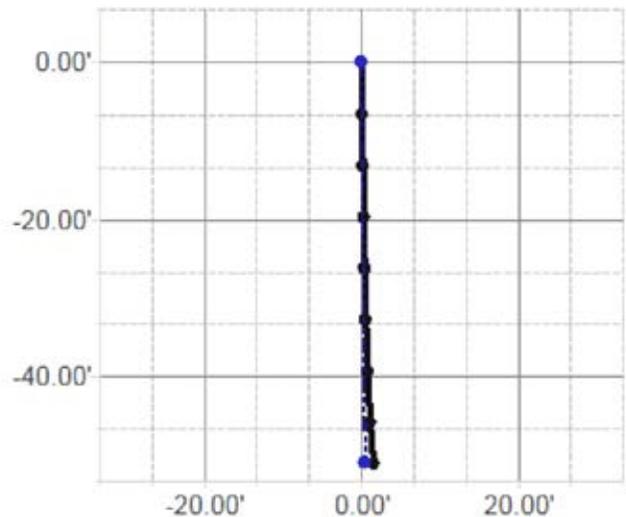
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	AZ	INC	Length	DEV	DEV %	Elevation
●	11.2°	0.7°	6.56'	0.03'	0.38%	-6.56'
●	14.2°	1.0°	13.12'	0.09'	0.66%	-13.12'
●	35.6°	1.1°	19.69'	0.16'	0.84%	-19.68'
●	62.0°	1.1°	26.25'	0.26'	0.99%	-26.24'
●	52.5°	1.6°	32.81'	0.41'	1.26%	-32.80'
●	28.2°	2.3°	39.37'	0.61'	1.56%	-39.36'
●	18.6°	2.8°	45.93'	0.85'	1.84%	-45.91'
●	336.0°	5.8°	51.14'	1.11'	2.16%	-51.10'

# Deployment Report

## R4-H07

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 16:24

	Inclination	Azimuth	Length	Depth
Measured	8.04°	7.99°	45.93'	-45.48'
Planned	5.70°	0.00°	50.00'	-49.75'
Deviation	2.34°	7.99°	4.07'	4.28'

	Easting	Northing	Elevation
Collar	12.00'	5.00'	0.00'
Measured End	12.89'	11.36'	-45.48'
Designed End	12.00'	9.97'	-49.75'

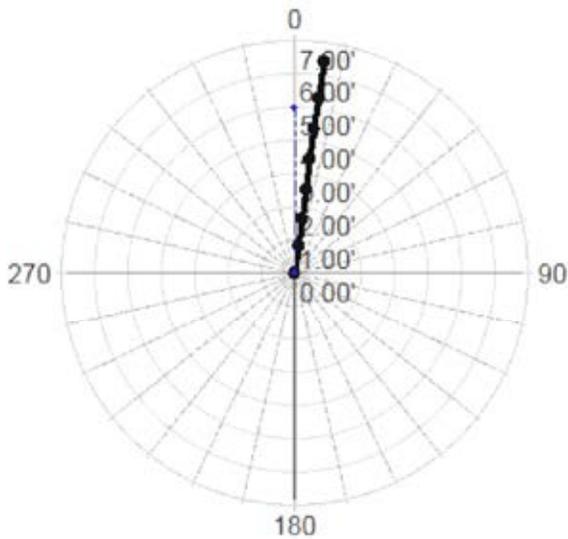
Alignment Name: Alignment 17:06

Alignment Time: 16:06:36

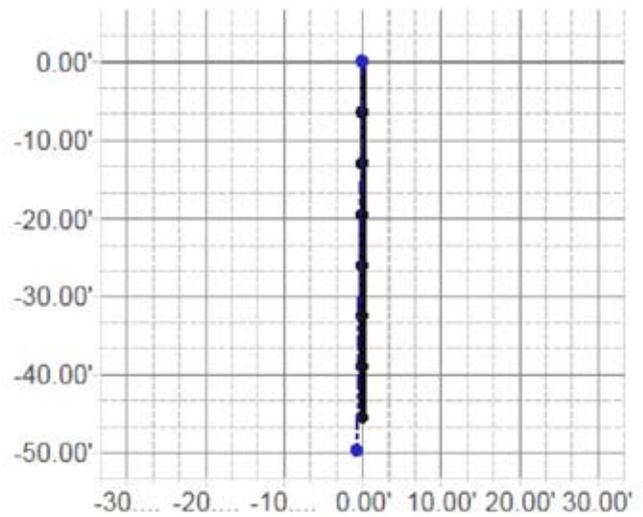
Calibration Angle: 180.00°

End Deviation 4.59'

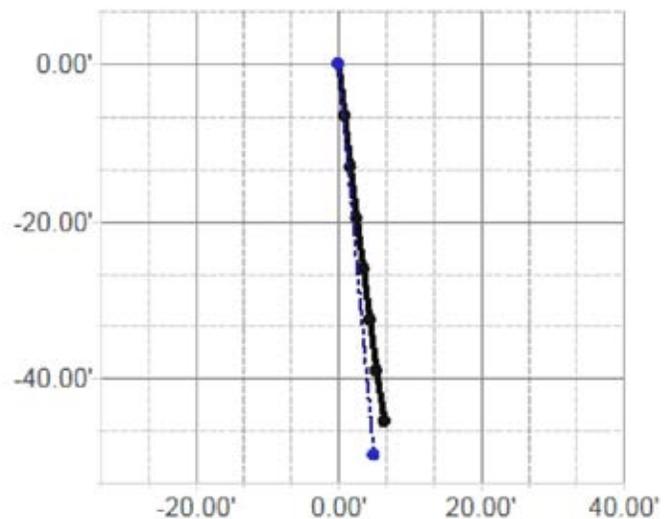
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	AZ	INC	Length	DEV	DEV %	Elevation
●	8.9°	7.2°	6.56'	0.21'	3.18%	-6.51'
●	7.5°	7.2°	13.12'	0.40'	3.08%	-13.02'
●	7.6°	7.8°	19.69'	0.66'	3.35%	-19.52'
●	6.7°	8.1°	26.25'	0.95'	3.61%	-26.02'
●	7.6°	8.0°	32.81'	1.23'	3.75%	-32.51'
●	9.0°	8.1°	39.37'	1.54'	3.90%	-39.01'
●	8.6°	9.8°	45.93'	2.02'	4.40%	-45.48'

# Deployment Report

## R4-H08

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 16:21

	Inclination	Azimuth	Length	Depth
Measured	14.06°	7.89°	45.93'	-44.55'
Planned	11.20°	0.00°	52.00'	-51.01'
Deviation	2.86°	7.89°	6.07'	6.46'

	Easting	Northing	Elevation
Collar	12.00'	6.00'	0.00'
Measured End	13.53'	17.05'	-44.55'
Designed End	12.00'	16.10'	-51.01'

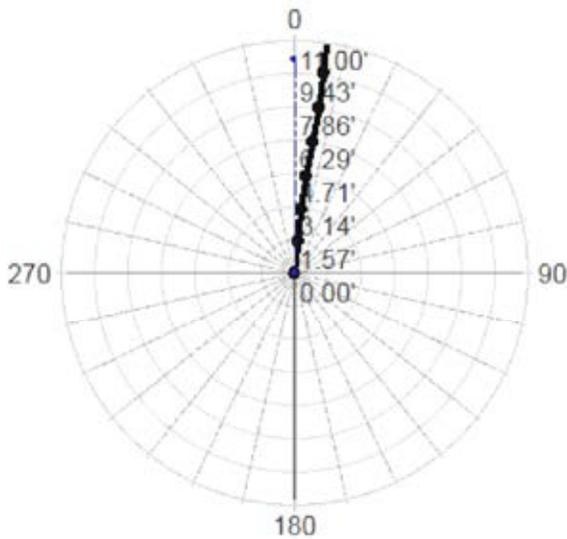
Alignment Name: Alignment 17:06

Alignment Time: 16:06:36

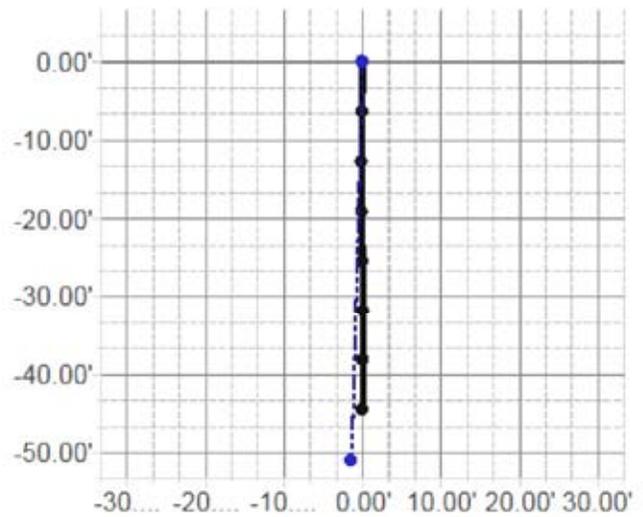
Calibration Angle: 180.00°

End Deviation 6.70'

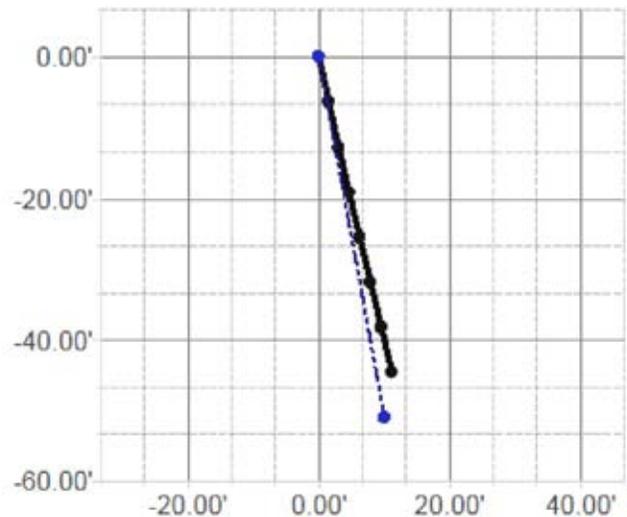
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	AZ	INC	Length	DEV	DEV %	Elevation
●	6.2°	13.4°	6.56'	0.29'	4.47%	-6.38'
●	5.8°	13.3°	13.12'	0.58'	4.39%	-12.77'
●	8.4°	13.9°	19.69'	0.94'	4.80%	-19.14'
●	11.0°	14.5°	26.25'	1.41'	5.39%	-25.49'
●	10.6°	14.6°	32.81'	1.88'	5.73%	-31.84'
●	7.2°	14.4°	39.37'	2.29'	5.82%	-38.19'
●	5.8°	14.3°	45.93'	2.67'	5.81%	-44.55'



# Deployment Report

# R4-H09:Deployment-1



Surveyor Rsibley  
 Project 2345-262  
 Survey Date 2025-07-27 16:03

	Inclination	Azimuth	Length	Depth
Measured	22.12°	1.55°	52.49'	-48.62'
Planned	17.10°	0.00°	53.00'	-50.66'
Deviation	5.02°	1.55°	0.51'	2.04'

	Easting	Northing	Elevation
Collar	12.00'	7.00'	0.00'
Measured End	12.54'	26.76'	-48.62'
Designed End	12.00'	22.58'	-50.66'

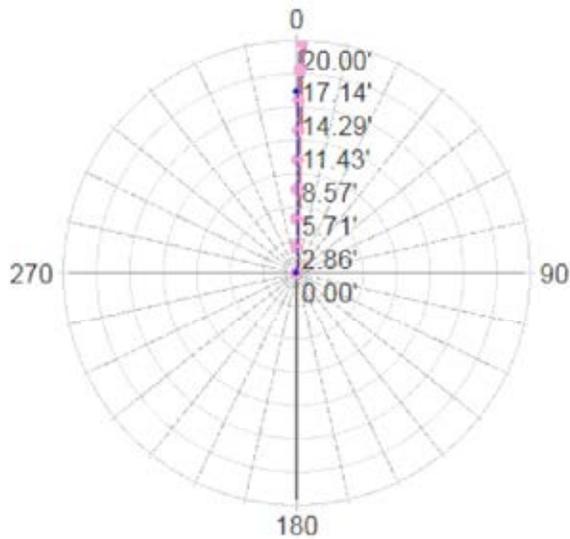
Alignment Name: Alignment 16:59

Alignment Time: 15:59:11

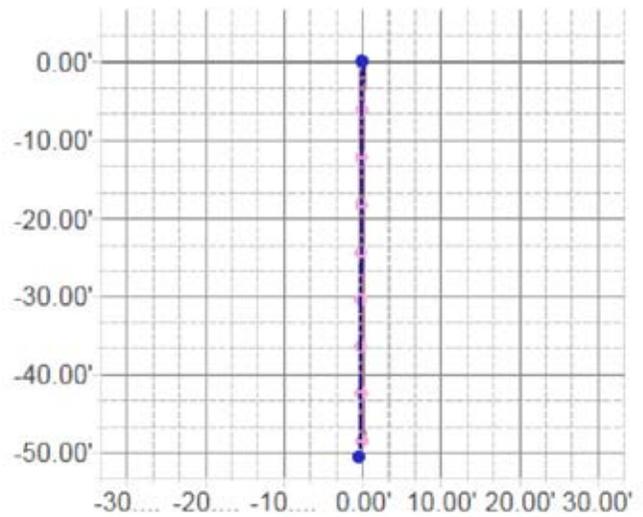
Calibration Angle: 180.00°

End Deviation 4.67'

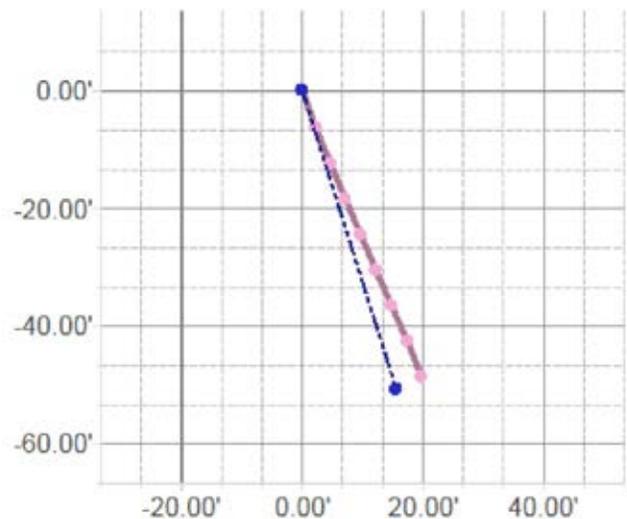
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	AZ	INC	Length	DEV	DEV %	Elevation
●	0.4°	19.9°	6.56'	0.32'	4.92%	-6.17'
●	0.6°	21.5°	13.12'	0.82'	6.27%	-12.28'
●	1.2°	22.7°	19.69'	1.47'	7.46%	-18.33'
●	1.0°	22.5°	26.25'	2.09'	7.96%	-24.39'
●	1.1°	22.8°	32.81'	2.74'	8.36%	-30.44'
●	1.8°	23.0°	39.37'	3.42'	8.68%	-36.48'
●	2.0°	23.6°	45.93'	4.16'	9.06%	-42.49'
●	4.4°	21.0°	52.49'	4.62'	8.80%	-48.62'



# Deployment Report

# R4-H09:Deployment-2



Surveyor Rsibley  
 Project 2345-262  
 Survey Date 2025-07-27 16:08

	Inclination	Azimuth	Length	Depth
Measured	22.00°	1.39°	52.49'	-48.66'
Planned	17.10°	0.00°	53.00'	-50.66'
Deviation	4.90°	1.39°	0.51'	2.00'

	Easting	Northing	Elevation
Collar	12.00'	7.00'	0.00'
Measured End	12.48'	26.65'	-48.66'
Designed End	12.00'	22.58'	-50.66'

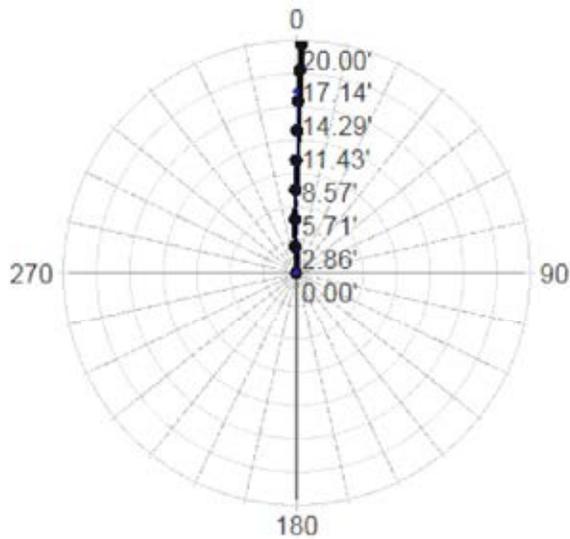
Alignment Name: Alignment 17:06

Alignment Time: 16:06:36

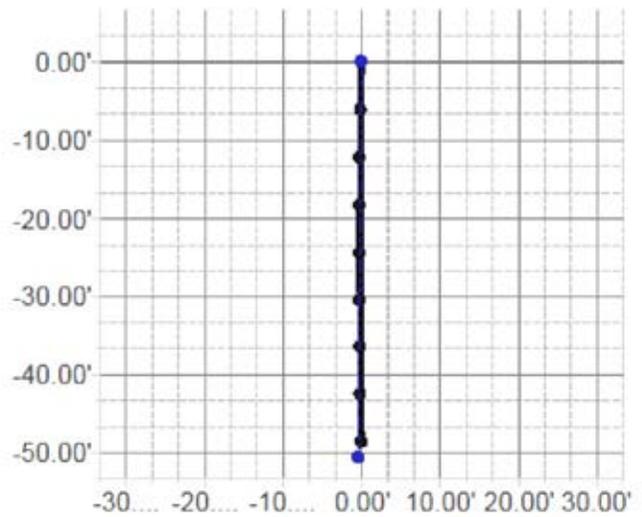
Calibration Angle: 180.00°

End Deviation 4.56'

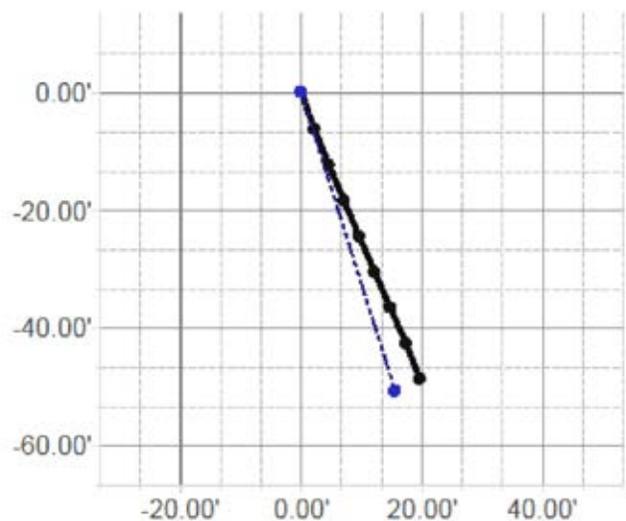
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	AZ	INC	Length	DEV	DEV %	Elevation
●	358.6°	19.7°	6.56'	0.31'	4.68%	-6.18'
●	359.5°	21.3°	13.12'	0.79'	6.00%	-12.29'
●	0.9°	22.7°	19.69'	1.42'	7.23%	-18.34'
●	0.9°	22.5°	26.25'	2.04'	7.78%	-24.40'
●	1.9°	22.8°	32.81'	2.69'	8.21%	-30.45'
●	2.2°	22.9°	39.37'	3.36'	8.54%	-36.50'
●	2.3°	23.4°	45.93'	4.09'	8.90%	-42.52'
●	4.5°	20.7°	52.49'	4.50'	8.58%	-48.66'

# Deployment Report

## R4-H10

Surveyor: Rsibley  
 Project: 2345-262  
 Survey Date: 2025-07-27 16:01

	Inclination	Azimuth	Length	Depth
Measured	24.60°	0.60°	41.93'	-38.12'
Planned	23.40°	0.00°	43.00'	-39.46'
Deviation	1.20°	0.60°	1.07'	1.34'

	Easting	Northing	Elevation
Collar	12.00'	8.00'	0.00'
Measured End	12.18'	25.46'	-38.12'
Designed End	12.00'	25.08'	-39.46'

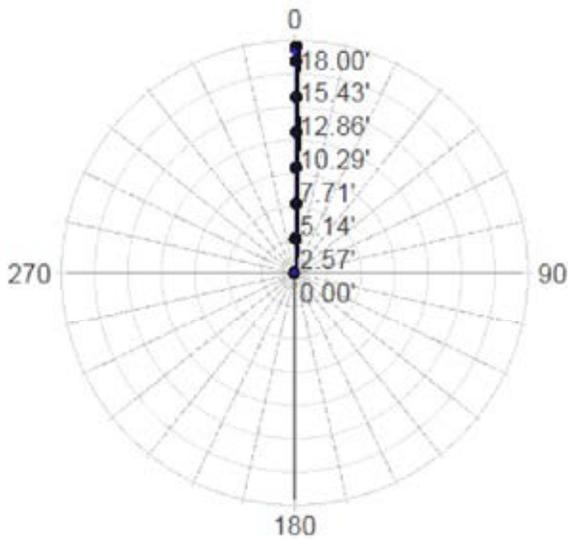
Alignment Name: Alignment 16:59

Alignment Time: 15:59:11

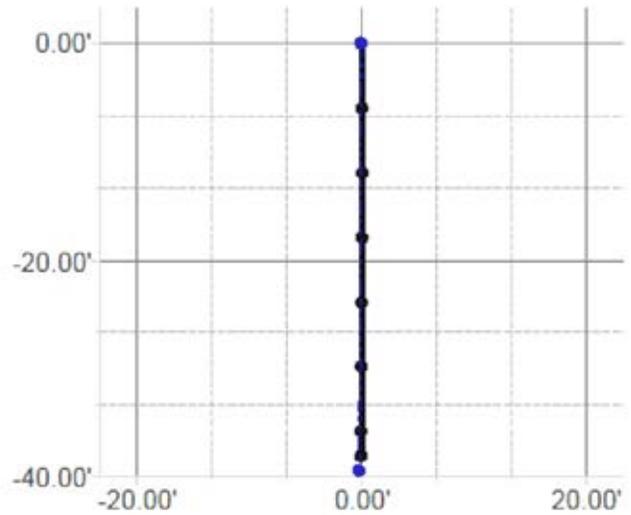
Calibration Angle: 180.00°

End Deviation 1.41'

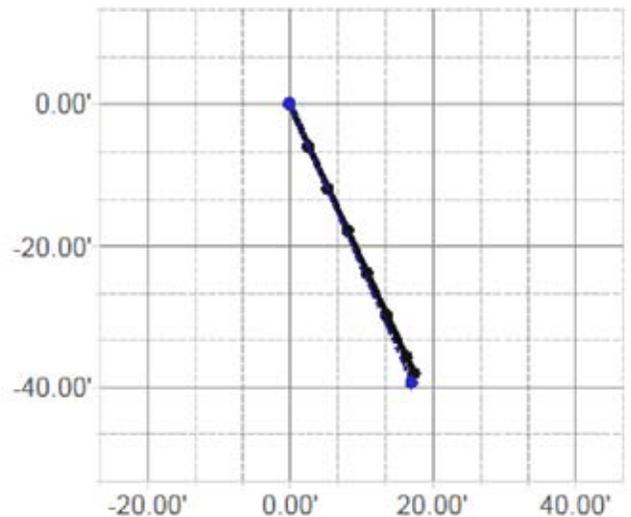
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	AZ	INC	Length	DEV	DEV %	Elevation
●	2.5°	23.8°	6.56'	0.12'	1.90%	-6.00'
●	1.1°	24.4°	13.12'	0.23'	1.78%	-11.98'
●	0.1°	24.9°	19.69'	0.37'	1.90%	-17.93'
●	0.2°	24.5°	26.25'	0.50'	1.89%	-23.90'
●	359.8°	24.6°	32.81'	0.62'	1.89%	-29.87'
●	0.1°	25.0°	39.37'	0.80'	2.04%	-35.81'
●	0.2°	25.6°	41.93'	0.90'	2.14%	-38.12'



# Deployment Report

## R-01/R8-2



Surveyor  
 Project EL1240-159  
 Row R-01  
 Survey Date 2025-07-26 14:52

	Inclination	Azimuth	Length	Depth
Measured	26.81°	359.18°	49.21'	-43.91'
Planned	25.10°	0.00°	48.00'	-43.47'
Deviation	1.71°	0.82°	1.21'	0.45'

	Easting	Northing	Elevation
Collar	0.00'	0.50'	0.00'
Measured End	-0.32'	22.69'	-43.91'
Designed End	0.00'	20.86'	-43.47'

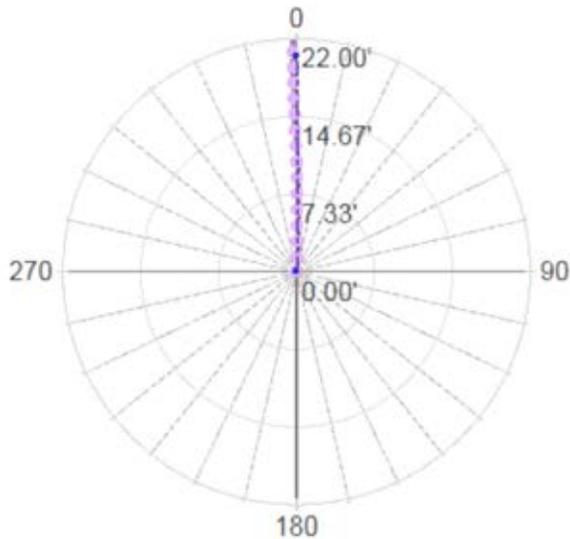
Alignment Name: Alignment 15:44

Alignment Time: 14:44:05

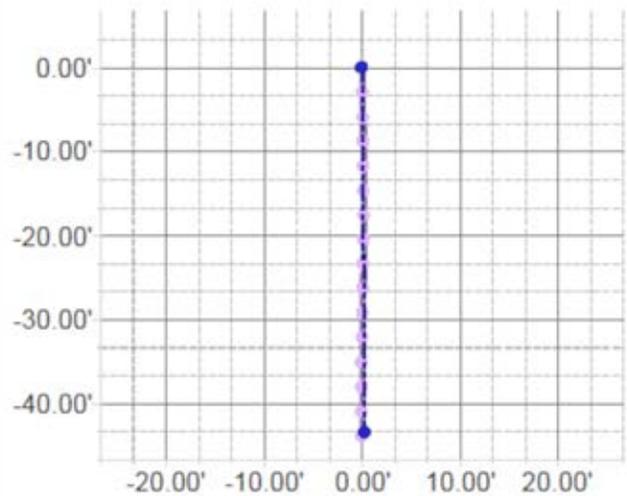
Calibration Angle: 0.00°

End Deviation 1.91'

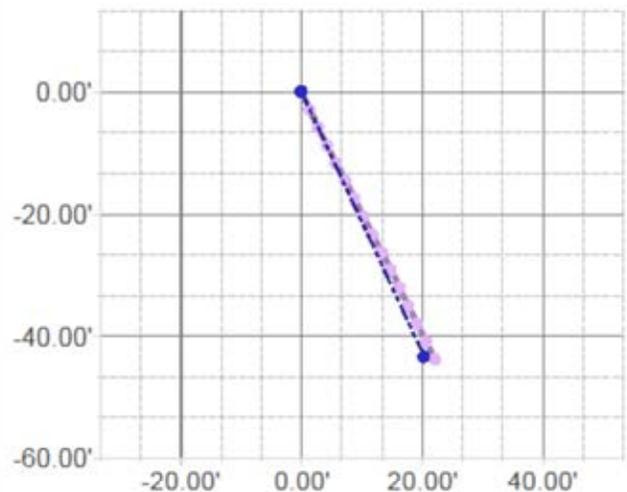
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	AZ	INC	Length	DEV	DEV %	Elevation
●	2.5°	25.0°	3.28'	0.06'	1.86%	-2.97'
●	1.3°	25.8°	6.56'	0.10'	1.49%	-5.93'
●	0.5°	27.1°	9.84'	0.18'	1.84%	-8.85'
●	0.2°	27.2°	13.12'	0.29'	2.20%	-11.77'
●	359.8°	27.1°	16.40'	0.39'	2.41%	-14.69'
●	0.1°	27.6°	19.69'	0.54'	2.73%	-17.59'
●	358.9°	27.5°	22.97'	0.67'	2.92%	-20.50'
●	357.3°	26.8°	26.25'	0.76'	2.90%	-23.43'
●	357.4°	27.5°	29.53'	0.90'	3.04%	-26.34'
●	357.9°	27.4°	32.81'	1.04'	3.15%	-29.25'
●	357.7°	26.2°	36.09'	1.10'	3.06%	-32.20'
●	357.5°	26.3°	39.37'	1.18'	3.01%	-35.14'
●	358.7°	26.8°	42.65'	1.28'	3.01%	-38.07'
●	359.0°	26.7°	45.93'	1.38'	3.01%	-41.00'
●	359.2°	27.2°	49.21'	1.91'	3.89%	-43.91'



# Deployment Report

## R-01/R8-3



Surveyor  
 Project EL1240-159  
 Row R-01  
 Survey Date 2025-07-26 14:55

	Inclination	Azimuth	Length	Depth
Measured	29.29°	356.01°	49.21'	-42.88'
Planned	25.00°	0.00°	48.00'	-43.50'
Deviation	4.29°	3.99°	1.21'	0.62'

	Easting	Northing	Elevation
Collar	0.00'	1.50'	0.00'
Measured End	-1.67'	25.49'	-42.88'
Designed End	0.00'	21.79'	-43.50'

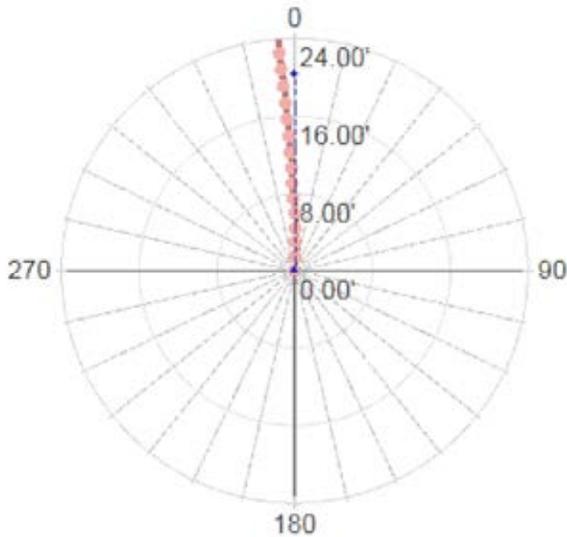
Alignment Name: Alignment 15:44

Alignment Time: 14:44:05

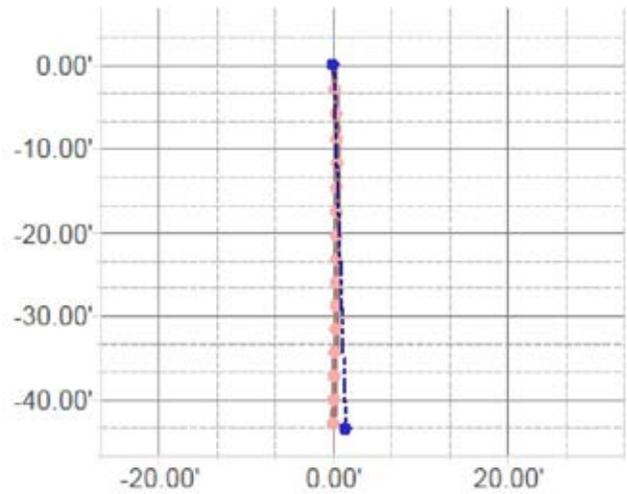
Calibration Angle: 0.00°

End Deviation 4.11'

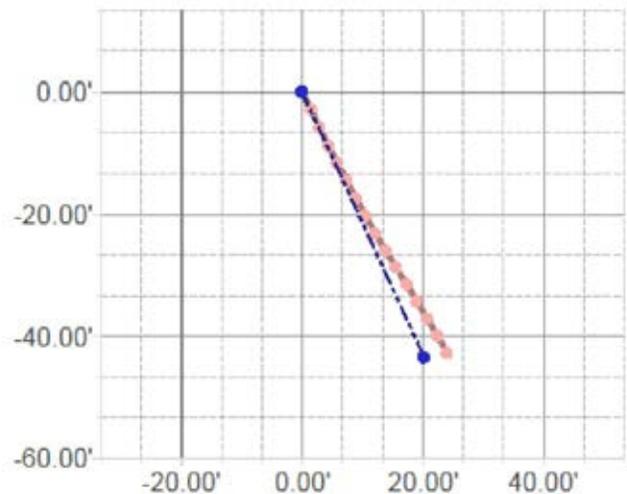
### Top



### Back



### Side



	AZ	INC	Length	DEV	DEV %	Elevation
●	3.2°	27.0°	3.28'	0.14'	4.22%	-2.92'
●	2.4°	26.1°	6.56'	0.23'	3.44%	-5.87'
●	360.0°	26.0°	9.84'	0.27'	2.77%	-8.82'
●	357.3°	27.8°	13.12'	0.40'	3.04%	-11.72'
●	355.6°	28.1°	16.40'	0.57'	3.45%	-14.61'
●	355.1°	28.2°	19.69'	0.77'	3.89%	-17.50'
●	355.8°	28.4°	22.97'	0.98'	4.27%	-20.39'
●	356.0°	28.9°	26.25'	1.22'	4.65%	-23.26'
●	355.7°	32.3°	29.53'	1.65'	5.60%	-26.04'
●	354.6°	32.2°	32.81'	2.09'	6.36%	-28.81'
●	353.3°	31.3°	36.09'	2.49'	6.89%	-31.62'
●	352.7°	32.0°	39.37'	2.93'	7.44%	-34.40'
●	353.4°	31.6°	42.65'	3.34'	7.84%	-37.19'
●	353.8°	30.8°	45.93'	3.71'	8.08%	-40.01'
●	353.7°	29.1°	49.21'	4.11'	8.36%	-42.88'



# Deployment Report

## R-02/R8-4



Surveyor  
 Project EL1240-159  
 Row R-02  
 Survey Date 2025-07-26 14:59

	Inclination	Azimuth	Length	Depth
Measured	27.81°	355.77°	49.21'	-43.42'
Planned	25.00°	0.00°	48.00'	-43.50'
Deviation	2.81°	4.23°	1.21'	0.09'

	Easting	Northing	Elevation
Collar	-1.00'	0.00'	0.00'
Measured End	-2.69'	22.84'	-43.42'
Designed End	-1.00'	20.29'	-43.50'

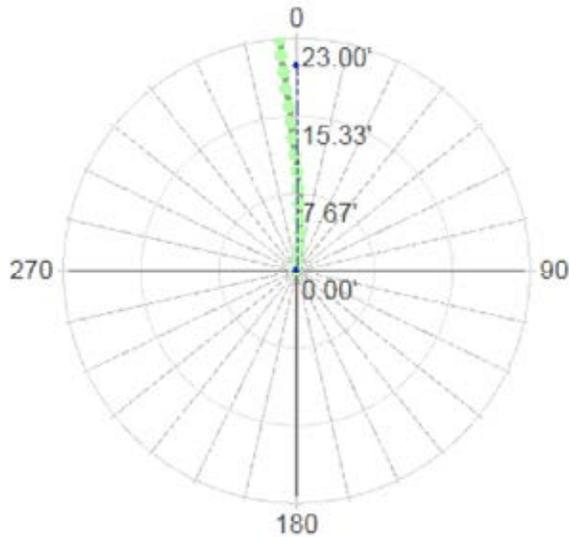
Alignment Name: Alignment 15:59

Alignment Time: 14:59:03

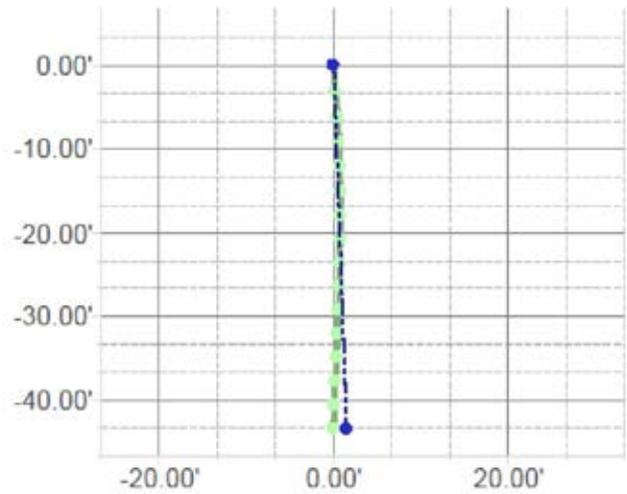
Calibration Angle: 0.00°

End Deviation 3.06'

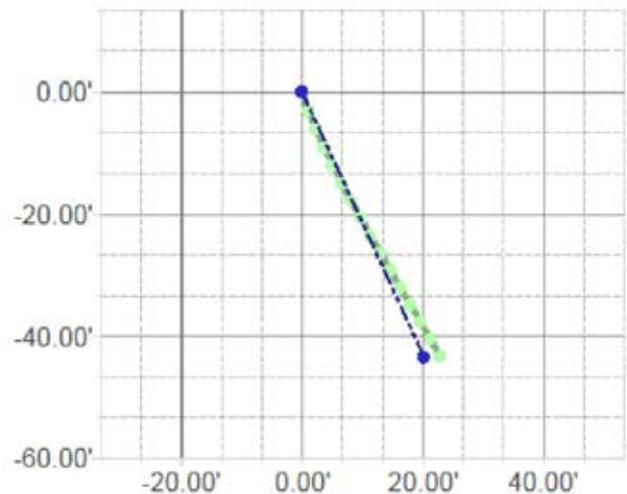
### Top



### Back



### Side



	AZ	INC	Length	DEV	DEV %	Elevation
●	8.7°	19.4°	3.28'	0.37'	11.35%	-3.10'
●	7.0°	21.8°	6.56'	0.61'	9.35%	-6.14'
●	1.8°	24.6°	9.84'	0.65'	6.65%	-9.12'
●	359.1°	26.0°	13.12'	0.59'	4.52%	-12.07'
●	358.4°	27.6°	16.40'	0.45'	2.74%	-14.98'
●	356.1°	29.3°	19.69'	0.21'	1.05%	-17.84'
●	354.9°	29.2°	22.97'	0.14'	0.60%	-20.71'
●	354.1°	29.4°	26.25'	0.40'	1.51%	-23.56'
●	353.3°	30.4°	29.53'	0.75'	2.53%	-26.39'
●	353.8°	29.2°	32.81'	1.03'	3.15%	-29.26'
●	352.1°	29.7°	36.09'	1.36'	3.78%	-32.11'
●	350.6°	31.1°	39.37'	1.79'	4.54%	-34.92'
●	351.6°	31.2°	42.65'	2.21'	5.17%	-37.73'
●	352.1°	29.9°	45.93'	2.55'	5.55%	-40.57'
●	352.2°	29.9°	49.21'	3.06'	6.22%	-43.42'



# Deployment Report

## R-02/R8-5



Surveyor  
 Project EL1240-159  
 Row R-02  
 Survey Date 2025-07-26 15:08

	Inclination	Azimuth	Length	Depth
Measured	27.29°	358.64°	49.21'	-43.72'
Planned	25.00°	0.00°	48.00'	-43.50'
Deviation	2.29°	1.36°	1.21'	0.22'

	Easting	Northing	Elevation
Collar	-1.00'	1.00'	0.00'
Measured End	-1.53'	23.55'	-43.72'
Designed End	-1.00'	21.29'	-43.50'

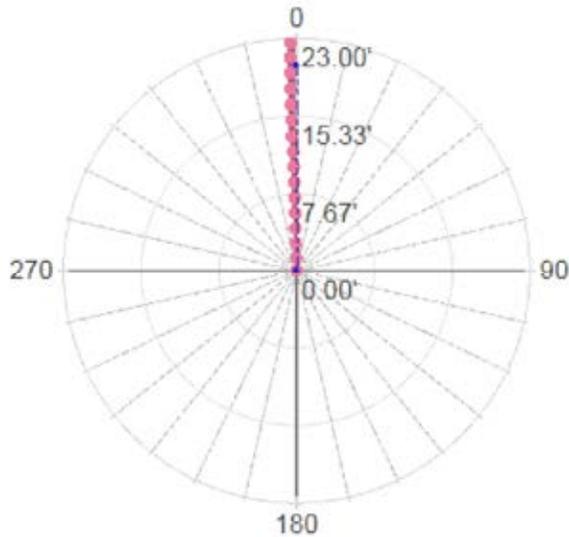
Alignment Name: Alignment 16:03

Alignment Time: 15:03:51

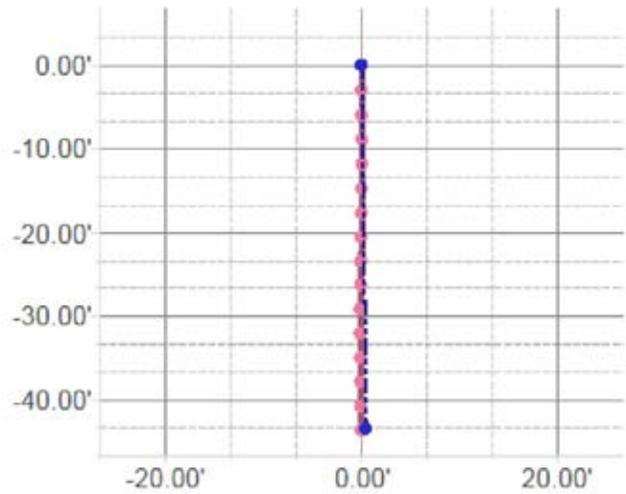
Calibration Angle: 0.00°

End Deviation 2.33'

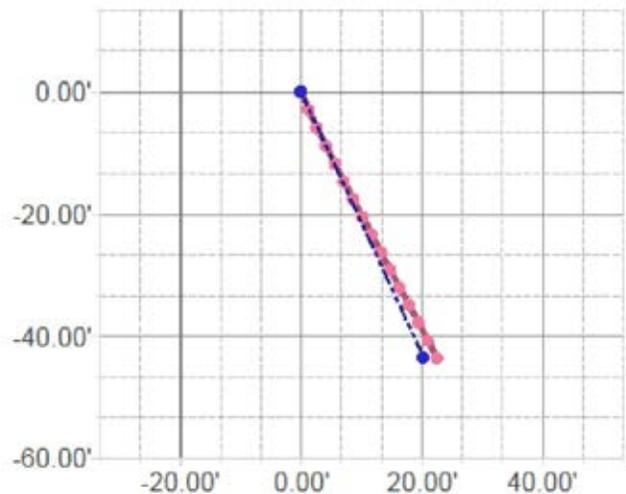
### Top



### Back



### Side



	AZ	INC	Length	DEV	DEV %	Elevation
●	0.3°	23.2°	3.28'	0.10'	3.10%	-3.01'
●	359.7°	24.9°	6.56'	0.11'	1.65%	-5.99'
●	359.2°	26.8°	9.84'	0.02'	0.22%	-8.92'
●	358.7°	27.2°	13.12'	0.13'	1.01%	-11.84'
●	358.2°	27.4°	16.40'	0.28'	1.70%	-14.75'
●	358.1°	28.1°	19.69'	0.46'	2.35%	-17.64'
●	357.4°	27.9°	22.97'	0.64'	2.78%	-20.54'
●	357.1°	27.4°	26.25'	0.79'	3.01%	-23.46'
●	357.2°	27.9°	29.53'	0.97'	3.29%	-26.36'
●	357.6°	28.0°	32.81'	1.16'	3.53%	-29.25'
●	358.4°	28.3°	36.09'	1.35'	3.74%	-32.14'
●	358.7°	28.6°	39.37'	1.56'	3.95%	-35.02'
●	358.8°	28.2°	42.65'	1.74'	4.08%	-37.91'
●	359.4°	27.9°	45.93'	1.90'	4.14%	-40.81'
●	1.3°	27.5°	49.21'	2.33'	4.74%	-43.72'

# Deployment Report

R7-2 

Surveyor  
 Project EL1240-159  
 Survey Date 2025-07-26 14:38

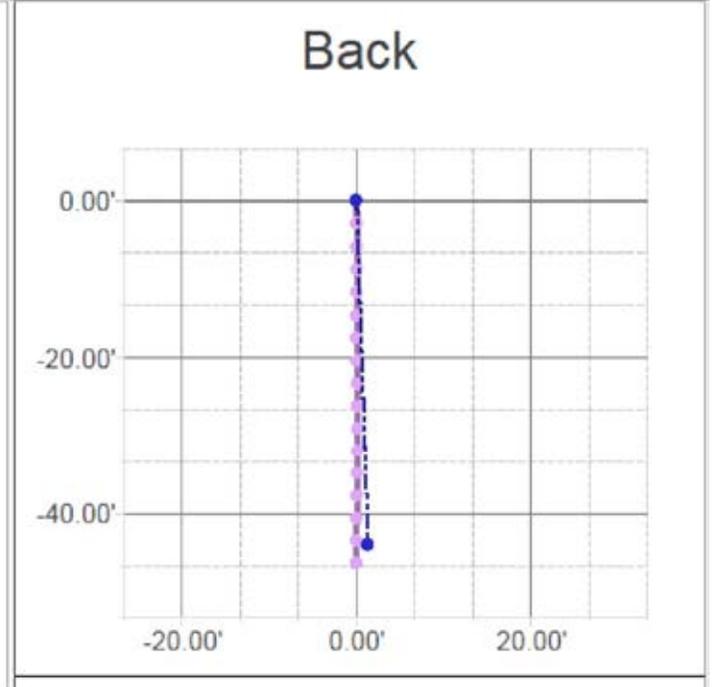
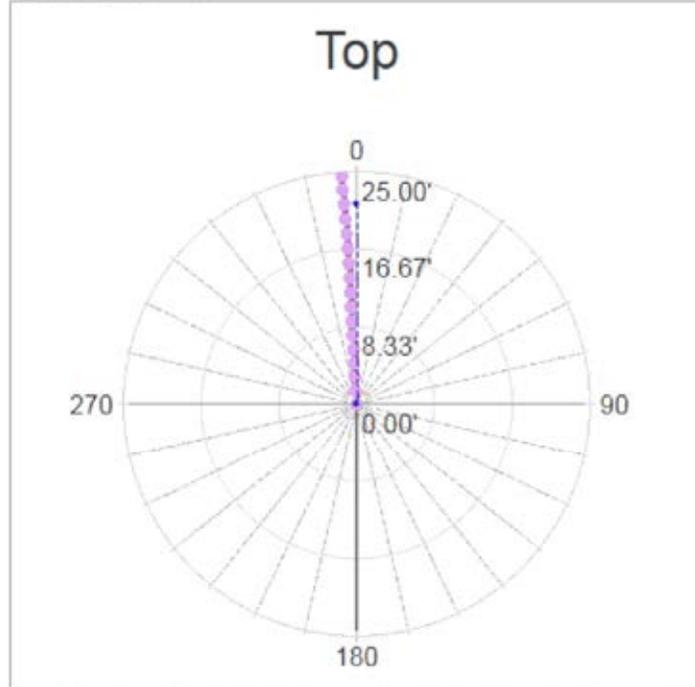
	Inclination	Azimuth	Length	Depth
Measured	27.83°	356.47°	52.49'	-46.41'
Planned	26.00°	0.00°	49.00'	-44.04'
Deviation	1.83°	3.53°	3.49'	2.37'

	Easting	Northing	Elevation
Collar	-2.50'	2.50'	0.00'
Measured End	-4.01'	26.96'	-46.41'
Designed End	-2.50'	23.98'	-44.04'

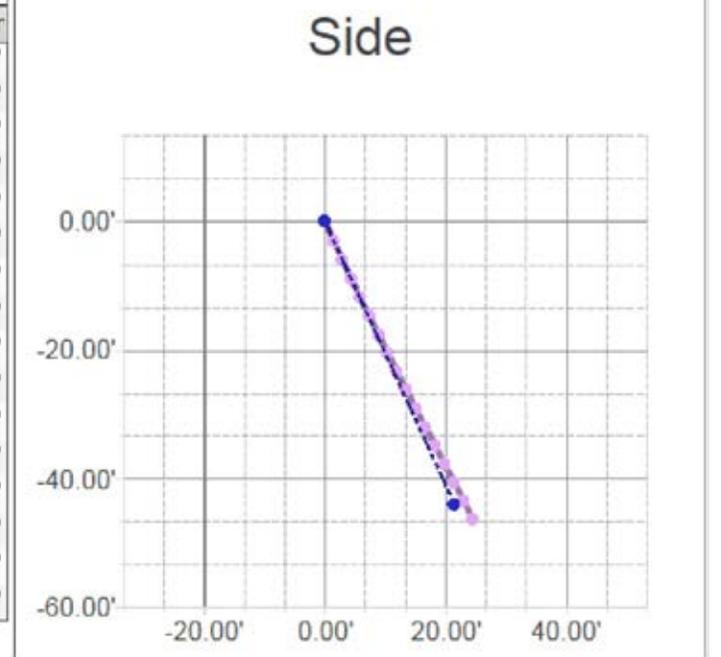
Alignment Name: Alignment 15:28

Alignment Time: 14:28:24      Calibration Angle: 0.00°

End Deviation 4.09'



	AZ	INC	Length	DEV	DEV %	Elevation
●	358.1°	25.8°	3.28'	0.05'	1.48%	-2.95'
●	358.0°	26.2°	6.56'	0.10'	1.50%	-5.90'
●	357.1°	26.5°	9.84'	0.17'	1.78%	-8.83'
●	355.9°	26.9°	13.12'	0.29'	2.21%	-11.76'
●	355.5°	27.3°	16.40'	0.42'	2.58%	-14.67'
●	356.7°	27.6°	19.69'	0.54'	2.74%	-17.58'
●	357.9°	28.0°	22.97'	0.64'	2.80%	-20.48'
●	357.9°	28.1°	26.25'	0.76'	2.90%	-23.37'
●	356.9°	28.5°	29.53'	0.91'	3.10%	-26.26'
●	356.7°	28.6°	32.81'	1.08'	3.30%	-29.14'
●	356.5°	28.8°	36.09'	1.26'	3.50%	-32.01'
●	355.4°	28.7°	39.37'	1.46'	3.70%	-34.89'
●	354.5°	29.0°	42.65'	1.68'	3.95%	-37.76'
●	354.9°	28.9°	45.93'	1.90'	4.13%	-40.63'
●	354.9°	28.3°	49.21'	2.09'	4.24%	-43.52'
●	357.0°	28.2°	52.49'	4.09'	7.80%	-46.41'



# Deployment Report

R7-2 

Surveyor  
 Project EL1240-159  
 Survey Date 2025-07-26 14:32

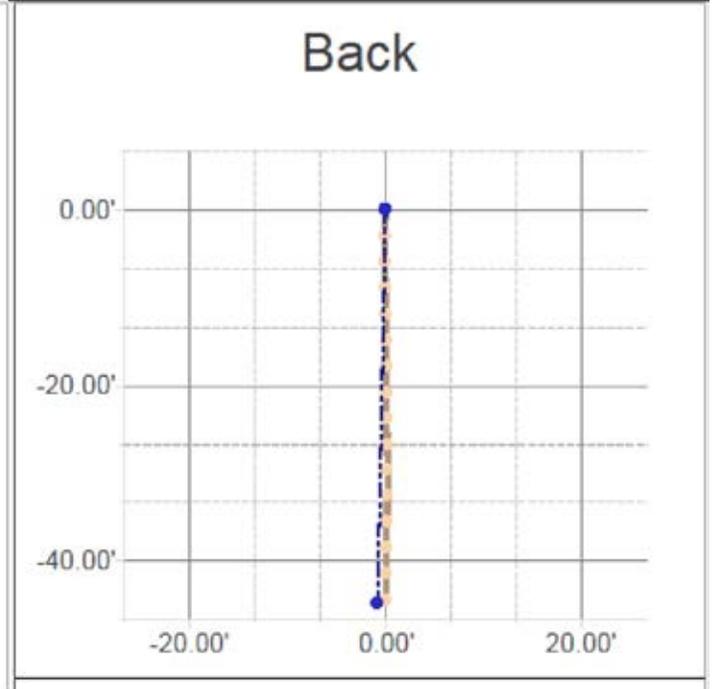
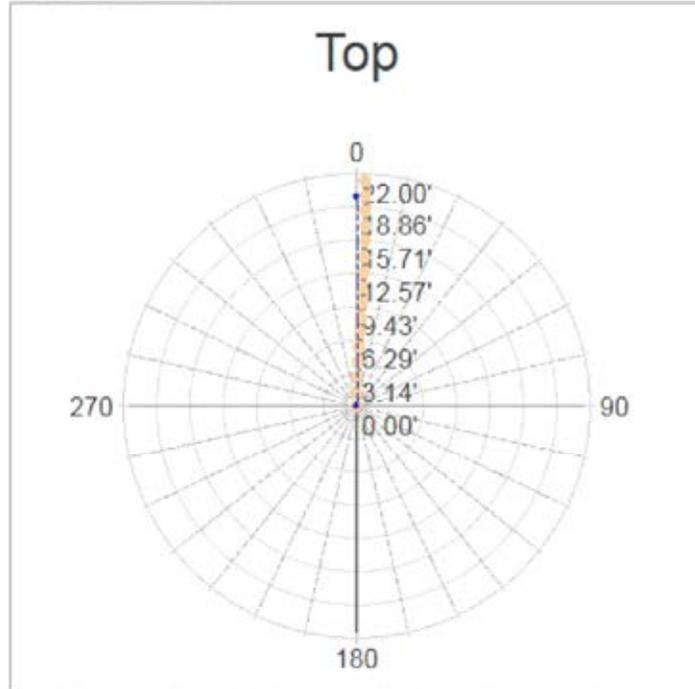
	Inclination	Azimuth	Length	Depth
Measured	25.61°	2.39°	49.21'	-44.37'
Planned	23.80°	0.00°	49.00'	-44.83'
Deviation	1.81°	2.39°	0.21'	0.46'

	Easting	Northing	Elevation
Collar	0.50'	2.50'	0.00'
Measured End	1.39'	23.75'	-44.37'
Designed End	0.50'	22.27'	-44.83'

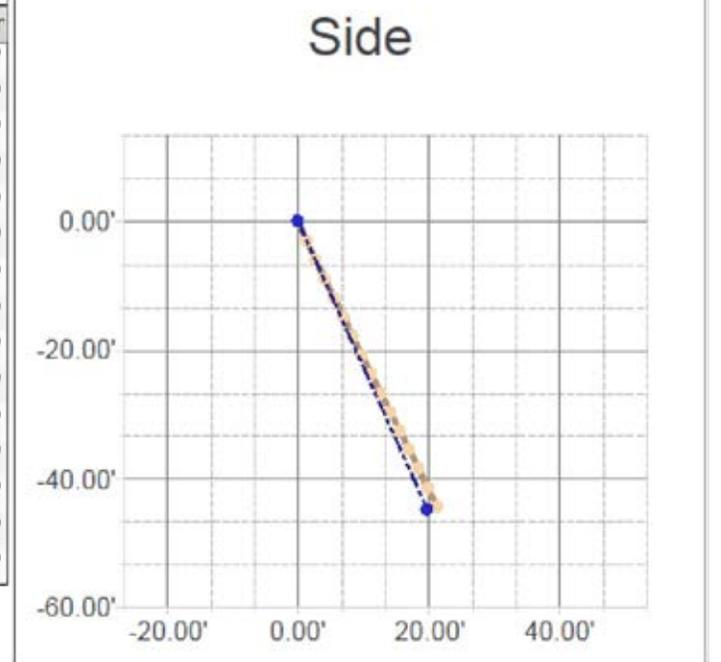
Alignment Name: Alignment 15:28

Alignment Time: 14:28:24      Calibration Angle: 0.00°

End Deviation 1.78'



	AZ	INC	Length	DEV	DEV %	Elevation
●	0.1°	23.9°	3.28'	0.01'	0.24%	-3.00'
●	2.4°	24.5°	6.56'	0.08'	1.17%	-5.98'
●	4.4°	25.6°	9.84'	0.23'	2.29%	-8.94'
●	3.7°	25.6°	13.12'	0.36'	2.76%	-11.90'
●	4.1°	25.3°	16.40'	0.49'	3.00%	-14.87'
●	4.3°	25.3°	19.69'	0.63'	3.18%	-17.83'
●	3.0°	25.6°	22.97'	0.75'	3.25%	-20.79'
●	2.1°	25.9°	26.25'	0.87'	3.31%	-23.74'
●	3.2°	26.0°	29.53'	1.01'	3.44%	-26.69'
●	3.1°	26.6°	32.81'	1.19'	3.62%	-29.63'
●	2.2°	26.4°	36.09'	1.34'	3.71%	-32.56'
●	1.4°	26.0°	39.37'	1.46'	3.72%	-35.51'
●	0.5°	25.8°	42.65'	1.57'	3.67%	-38.46'
●	0.3°	25.6°	45.93'	1.66'	3.61%	-41.42'
●	0.7°	26.0°	49.21'	1.78'	3.62%	-44.37'



# Deployment Report

R7-4 

Surveyor  
 Project EL1240-159  
 Survey Date 2025-07-26 14:29

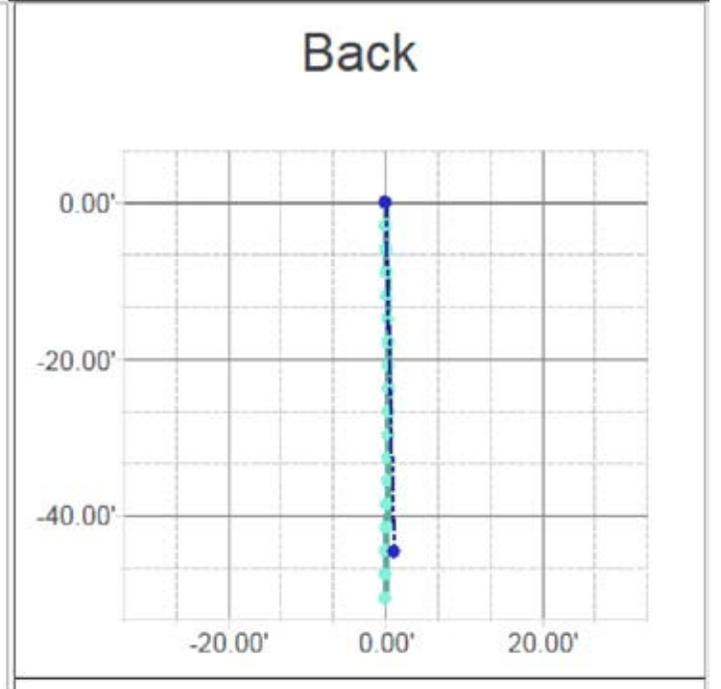
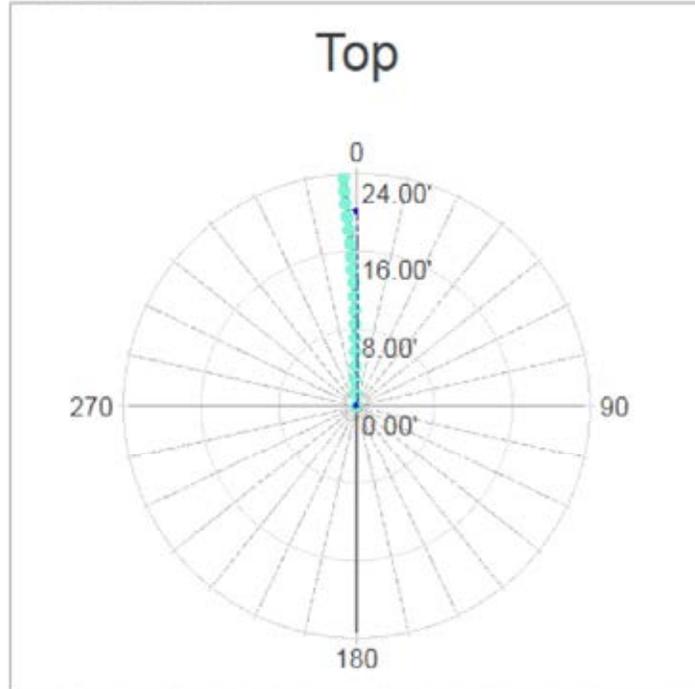
	Inclination	Azimuth	Length	Depth
Measured	24.96°	356.86°	55.77'	-50.55'
Planned	24.20°	0.00°	49.00'	-44.69'
Deviation	0.76°	3.14°	6.77'	5.86'

	Easting	Northing	Elevation
Collar	0.50'	-0.50'	0.00'
Measured End	-0.79'	22.99'	-50.55'
Designed End	0.50'	19.59'	-44.69'

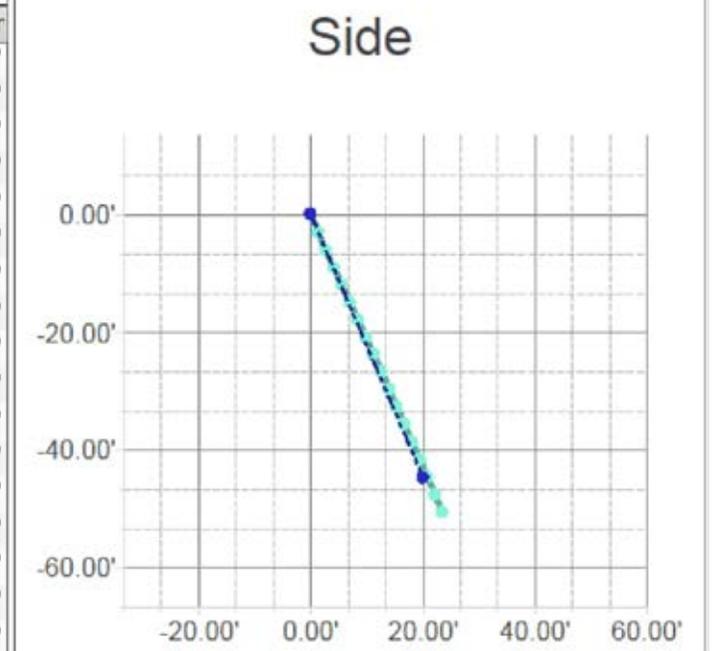
Alignment Name: Alignment 15:28

Alignment Time: 14:28:24      Calibration Angle: 0.00°

End Deviation 6.90'



	AZ	INC	Length	DEV	DEV %	Elevation
●	358.8°	23.7°	3.28'	0.04'	1.23%	-3.00'
●	359.6°	24.8°	6.56'	0.04'	0.56%	-5.98'
●	360.0°	25.8°	9.84'	0.10'	1.06%	-8.94'
●	359.4°	26.0°	13.12'	0.20'	1.56%	-11.89'
●	359.2°	25.5°	16.40'	0.28'	1.71%	-14.85'
●	359.4°	25.7°	19.69'	0.37'	1.88%	-17.80'
●	358.5°	26.1°	22.97'	0.49'	2.12%	-20.75'
●	357.5°	25.7°	26.25'	0.59'	2.23%	-23.70'
●	357.1°	25.4°	29.53'	0.67'	2.28%	-26.67'
●	355.8°	24.4°	32.81'	0.72'	2.20%	-29.66'
●	354.6°	24.0°	36.09'	0.78'	2.16%	-32.65'
●	354.8°	24.5°	39.37'	0.87'	2.21%	-35.64'
●	354.0°	25.0°	42.65'	1.00'	2.35%	-38.61'
●	353.0°	25.1°	45.93'	1.16'	2.53%	-41.58'
●	353.5°	24.4°	49.21'	1.30'	2.64%	-44.57'
●	354.6°	23.9°	52.49'	3.73'	7.10%	-47.57'
●	356.4°	24.6°	55.77'	6.90'	12.37%	-50.55'



# Deployment Report

R8-1 

Surveyor  
 Project EL1240-159  
 Survey Date 2025-07-26 14:45

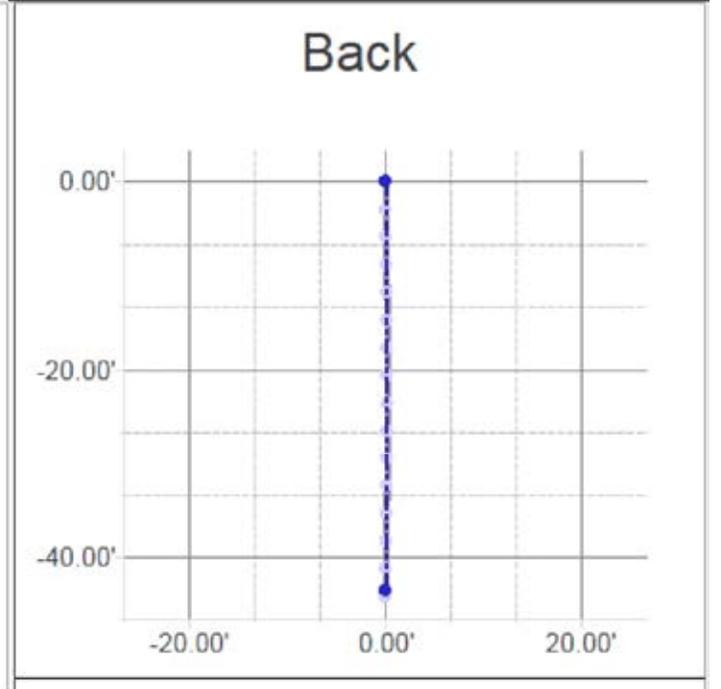
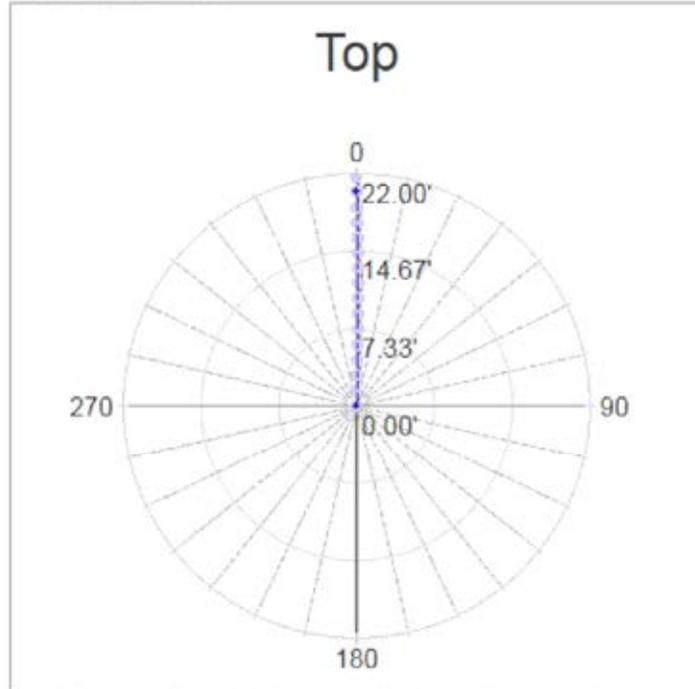
	Inclination	Azimuth	Length	Depth
Measured	26.10°	0.01°	49.21'	-44.19'
Planned	25.00°	0.00°	48.00'	-43.50'
Deviation	1.10°	0.01°	1.21'	0.69'

	Easting	Northing	Elevation
Collar	-1.00'	3.00'	0.00'
Measured End	-1.00'	24.65'	-44.19'
Designed End	-1.00'	23.29'	-43.50'

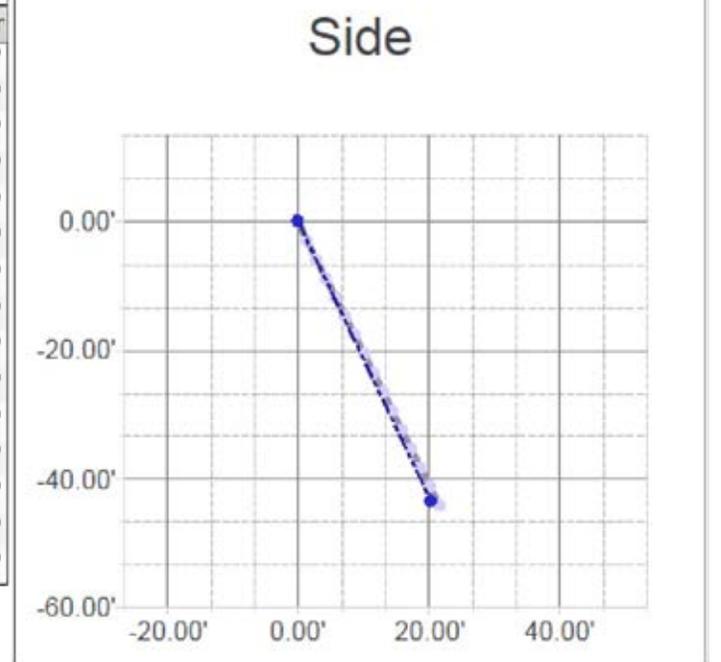
Alignment Name: Alignment 15:44

Alignment Time: 14:44:05      Calibration Angle: 0.00°

End Deviation 1.53'



	AZ	INC	Length	DEV	DEV %	Elevation
●	0.9°	25.5°	3.28'	0.04'	1.11%	-2.96'
●	1.6°	25.9°	6.56'	0.10'	1.56%	-5.91'
●	1.9°	26.5°	9.84'	0.20'	2.03%	-8.85'
●	1.7°	26.1°	13.12'	0.28'	2.10%	-11.79'
●	1.3°	26.3°	16.40'	0.36'	2.17%	-14.73'
●	0.3°	26.7°	19.69'	0.45'	2.26%	-17.67'
●	0.5°	26.3°	22.97'	0.52'	2.27%	-20.61'
●	0.6°	26.1°	26.25'	0.58'	2.23%	-23.55'
●	359.8°	25.7°	29.53'	0.62'	2.09%	-26.51'
●	359.3°	25.9°	32.81'	0.66'	2.01%	-29.46'
●	358.5°	25.9°	36.09'	0.70'	1.94%	-32.41'
●	358.3°	25.8°	39.37'	0.73'	1.87%	-35.37'
●	358.5°	26.3°	42.65'	0.80'	1.89%	-38.31'
●	358.2°	26.7°	45.93'	0.90'	1.96%	-41.24'
●	358.5°	25.8°	49.21'	1.53'	3.10%	-44.19'



# Deployment Report

R8-9 

Surveyor  
 Project EL1240-159  
 Survey Date 2025-07-26 14:49

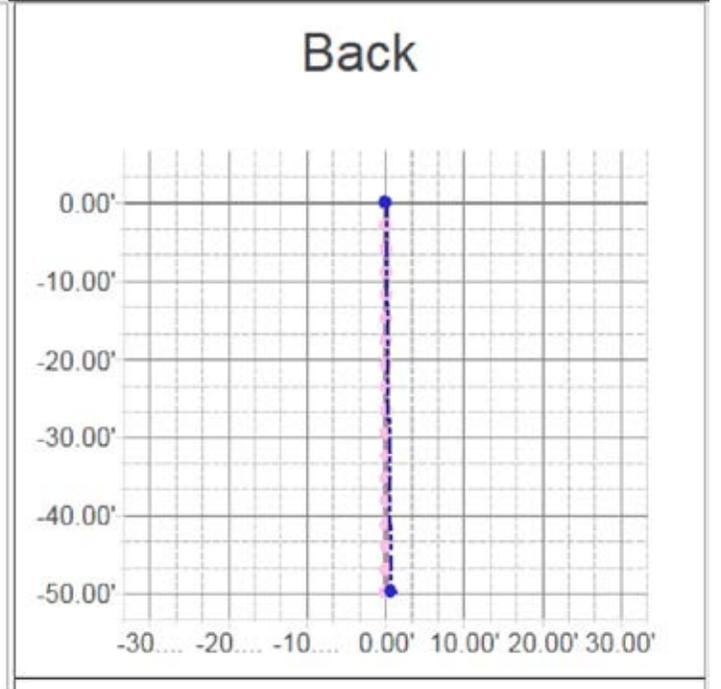
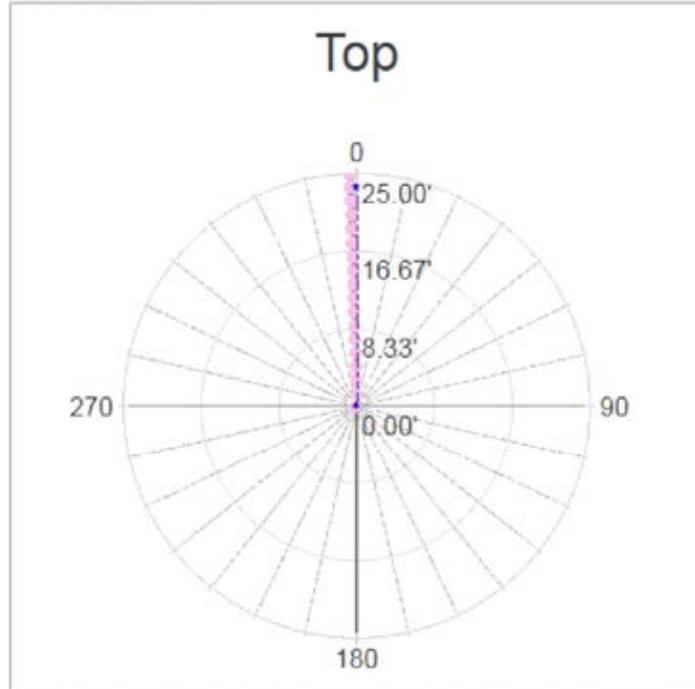
	Inclination	Azimuth	Length	Depth
Measured	26.56°	358.27°	55.77'	-49.88'
Planned	25.30°	0.00°	55.00'	-49.72'
Deviation	1.26°	1.73°	0.77'	0.16'

	Easting	Northing	Elevation
Collar	-1.00'	-1.00'	0.00'
Measured End	-1.75'	23.92'	-49.88'
Designed End	-1.00'	22.50'	-49.72'

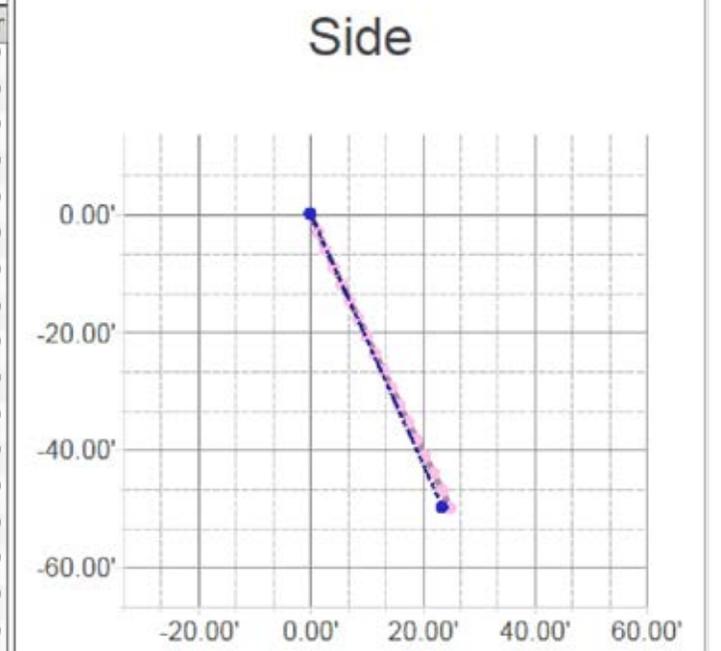
Alignment Name: Alignment 15:44

Alignment Time: 14:44:05      Calibration Angle: 0.00°

End Deviation 1.61'



	AZ	INC	Length	DEV	DEV %	Elevation
●	0.6°	24.1°	3.28'	0.07'	2.07%	-2.99'
●	0.5°	25.1°	6.56'	0.08'	1.26%	-5.97'
●	359.3°	26.1°	9.84'	0.03'	0.35%	-8.91'
●	358.1°	26.4°	13.12'	0.05'	0.39%	-11.85'
●	358.0°	26.9°	16.40'	0.15'	0.94%	-14.78'
●	358.1°	26.7°	19.69'	0.25'	1.26%	-17.71'
●	357.9°	26.6°	22.97'	0.34'	1.46%	-20.64'
●	358.2°	26.7°	26.25'	0.43'	1.64%	-23.57'
●	359.1°	26.5°	29.53'	0.50'	1.70%	-26.51'
●	358.9°	26.6°	32.81'	0.58'	1.77%	-29.44'
●	358.9°	26.9°	36.09'	0.67'	1.86%	-32.37'
●	358.5°	26.9°	39.37'	0.77'	1.96%	-35.29'
●	357.4°	27.5°	42.65'	0.91'	2.14%	-38.20'
●	357.4°	28.0°	45.93'	1.08'	2.35%	-41.10'
●	357.7°	27.3°	49.21'	1.21'	2.46%	-44.01'
●	356.9°	26.6°	52.49'	1.31'	2.50%	-46.95'
●	355.6°	26.6°	55.77'	1.61'	2.89%	-49.88'



# Deployment Report

R9-4 

Surveyor  
 Project EL1240-159  
 Survey Date 2025-07-26 14:35

	Inclination	Azimuth	Length	Depth
Measured	28.19°	349.79°	49.21'	-43.34'
Planned	26.00°	0.00°	50.00'	-44.94'
Deviation	2.19°	10.21°	0.79'	1.60'

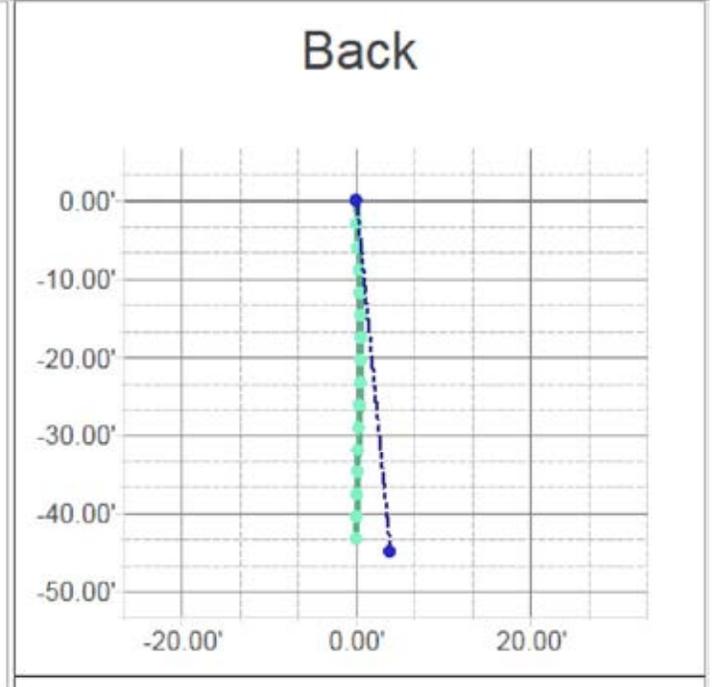
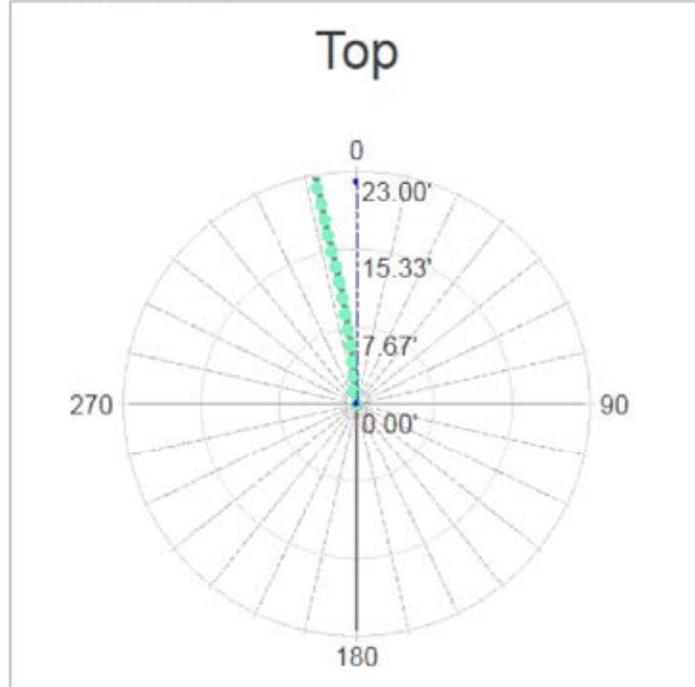
	Easting	Northing	Elevation
Collar	-2.50'	-0.50'	0.00'
Measured End	-6.62'	22.37'	-43.34'
Designed End	-2.50'	21.42'	-44.94'

Alignment Name: Alignment 15:28

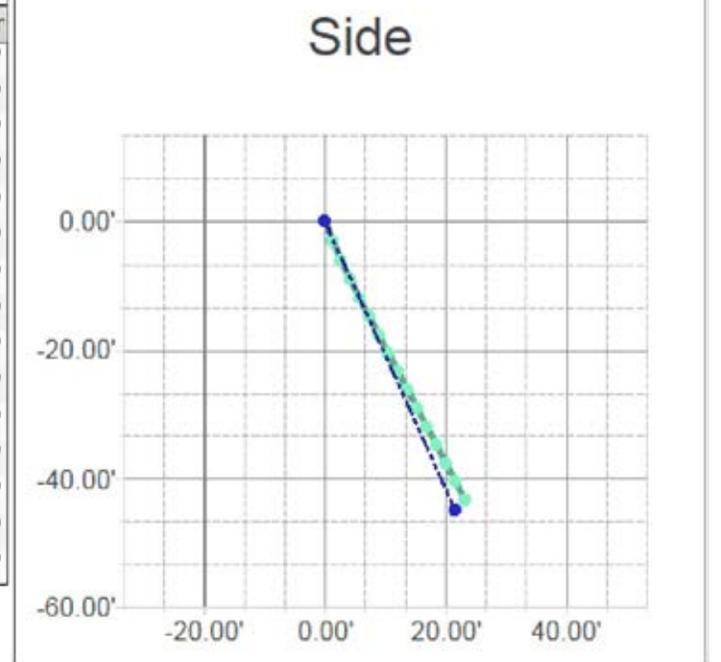
Alignment Time: 14:28:24

Calibration Angle: 0.00°

End Deviation 4.52'



	AZ	INC	Length	DEV	DEV %	Elevation
●	353.3°	23.6°	3.28'	0.21'	6.51%	-3.01'
●	355.0°	24.7°	6.56'	0.35'	5.40%	-5.99'
●	355.7°	27.0°	9.84'	0.42'	4.30%	-8.91'
●	353.6°	28.3°	13.12'	0.56'	4.29%	-11.80'
●	351.4°	28.8°	16.40'	0.80'	4.90%	-14.67'
●	350.6°	28.9°	19.69'	1.08'	5.51%	-17.54'
●	350.9°	28.8°	22.97'	1.36'	5.94%	-20.42'
●	348.6°	29.3°	26.25'	1.72'	6.54%	-23.28'
●	346.0°	29.1°	29.53'	2.13'	7.20%	-26.15'
●	345.8°	28.9°	32.81'	2.53'	7.72%	-29.02'
●	346.6°	29.5°	36.09'	2.94'	8.14%	-31.88'
●	347.9°	29.2°	39.37'	3.31'	8.40%	-34.74'
●	347.8°	28.8°	42.65'	3.66'	8.59%	-37.61'
●	346.7°	28.9°	45.93'	4.05'	8.81%	-40.49'
●	349.0°	29.6°	49.21'	4.40'	8.94%	-43.34'



**ATTACHMENT 3:**

# **VOD REPORTS**



ShockAI v1.0.5



# VoD monitoring report

**Coeur AK - Kensington Source Control : WSP USA Mining & Metals**

VoD-61 (VoD-Mini-61)

Prepared for Ryan Sibley

07/08/2025 - 11:48 (UTC-05:00)

# VoD Readings

Event Date

**Sunday, 27th Jul, 2025**

Event Time

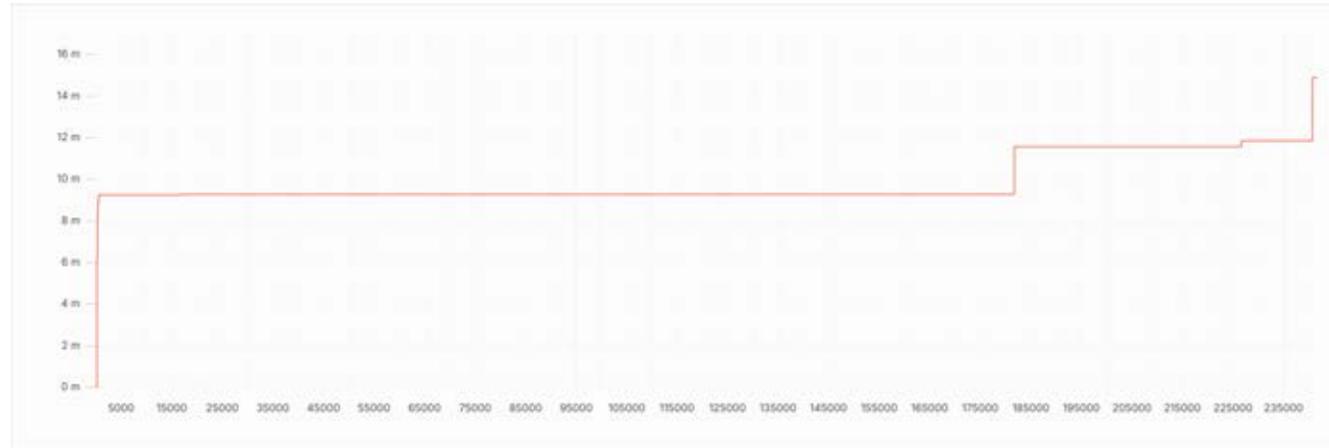
**21:39:10 (UTC-05:00)**

Event Duration

**1 secs**

Location

**Kensington Mine**



# Holes

Event Date

**Sunday, 27th Jul, 2025**

Event Time

**21:39:10 (UTC-05:00)**

Total Holes

**1**

NAME	USER	START	END	TOTAL
2125-102-1	RS	0.3906 ms 9.26 m	1.5039 ms 8.37 m	1.1133 ms 0.89 m

# Zones

Event Date

**Sunday, 27th Jul, 2025**

Event Time

**21:39:10 (UTC-05:00)**

Total Zones

**1**

NAME	USER	VOD	START	END	TOTAL
2125-102-1					
<b>Column</b>	<b>RS</b>	<b>5425.29 m/s</b>	<b>0.92 ms</b>	<b>1.50 ms</b>	<b>0.59 ms</b>
			<b>0.00 m</b>	<b>8.37 m</b>	<b>8.370 m</b>

# Hole

2125-102-1  
Hole ID

Titan 7000 RU  
Product

N/A  
Cable entry

N/A  
Cable exit

3.66 m  
Depth

N/A  
Stemming

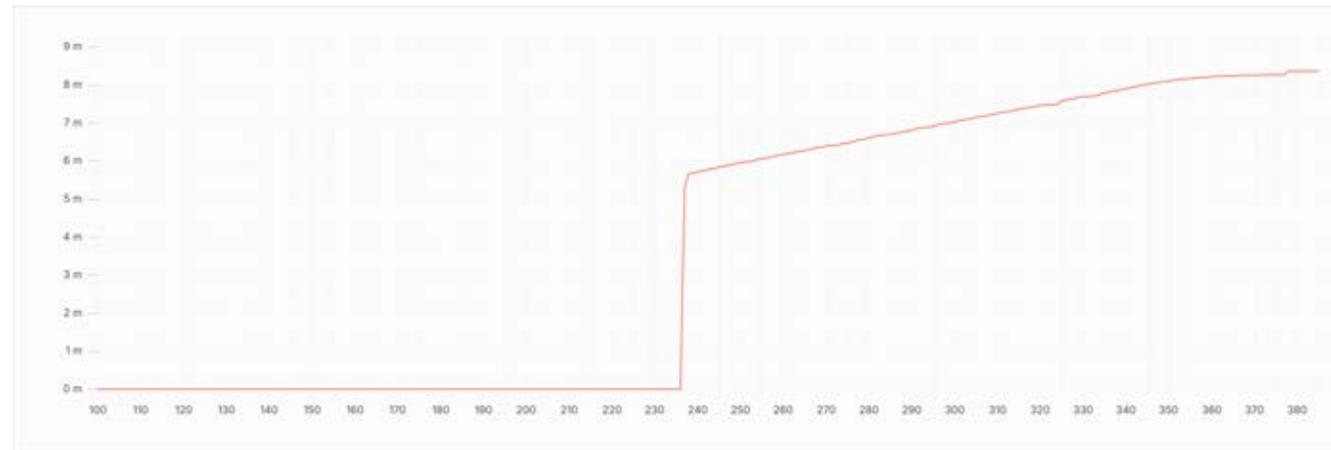
N/A  
Column

0.3 m  
Primer

63.5 mm  
Diameter

Elapsed Time (from first hole): 0.00 ms

	Start	End	Total
Time	0.39 ms	1.50 ms	1.11 ms
Length	9.26 m	8.37 m	0.89 m



	Expected	Actual	Difference
Hole	3.36 m	0.89 m	2.47 m
Column	3.36 m	8.37 m	5.01 m

# Zone

Name

**Column**

VoD

**5425.29 m/s**

Start

**0.918 ms**

**0.000 m**

End

**1.50 ms**

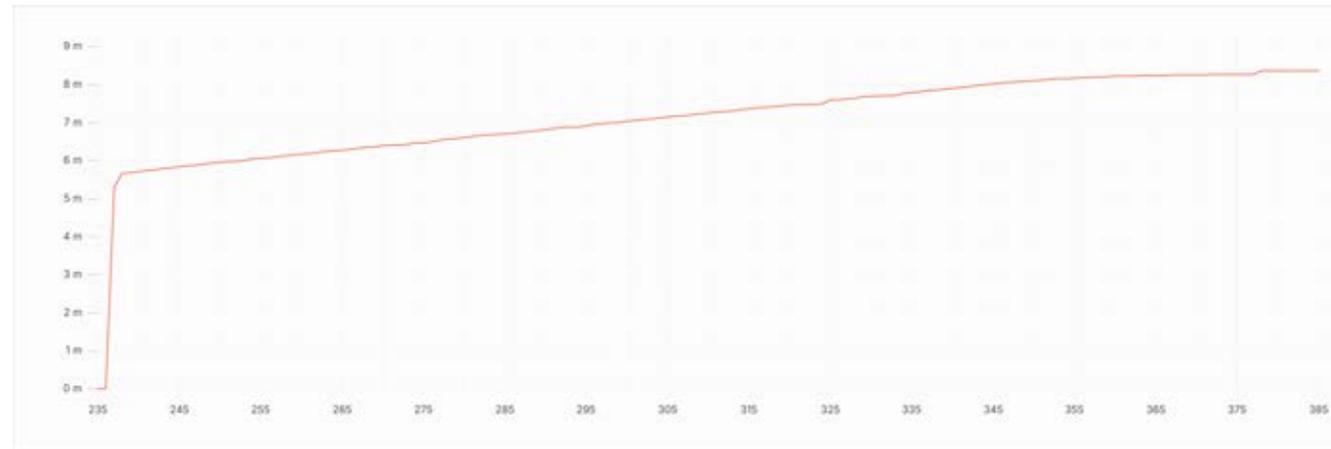
**8.370 m**

Total

**0.586 ms**

**8.370 m**

Cable Length





ShockAI v1.0.5



# VoD monitoring report

**Coeur AK - Kensington Source Control : WSP USA Mining & Metals**

VoD-61 (VoD-Mini-61)

Prepared for Ryan Sibley

07/08/2025 - 11:40 (UTC-05:00)

# VoD Readings

Event Date

**Thursday, 24th Jul, 2025**

Event Time

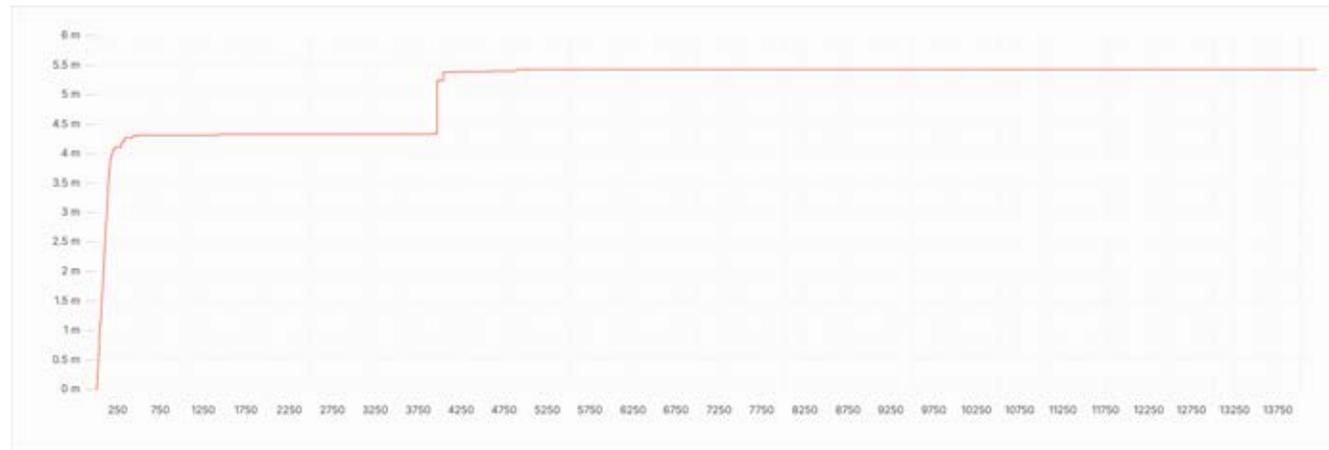
**21:41:34 (UTC-05:00)**

Event Duration

**1 secs**

Location

**Kensington Mine**



# Holes

Event Date

**Thursday, 24th Jul, 2025**

Event Time

**21:41:34 (UTC-05:00)**

Total Holes

**1**

NAME	USER	START	END	TOTAL
K1555-083-0	RS	0.0000 ms 5.42 m	0.8320 ms 4.07 m	0.8320 ms 1.35 m

# Zones

Event Date

**Thursday, 24th Jul, 2025**

Event Time

**21:41:34 (UTC-05:00)**

Total Zones

**1**

NAME	USER	VOD	START	END	TOTAL
<i>K1555-083-0</i>					
<b>Column</b>	<b>RS</b>	<b>5578.7 m/s</b>	<b>0.05 ms</b>	<b>0.83 ms</b>	<b>0.78 ms</b>
			<b>0.00 m</b>	<b>4.07 m</b>	<b>4.070 m</b>

# Hole

**K1555-083-0**  
Hole ID

**Titan 7000 RU**  
Product

0.00 m Cable entry  
21.34 m Cable exit

16.77 m  
Depth

1.22 m  
Stemming

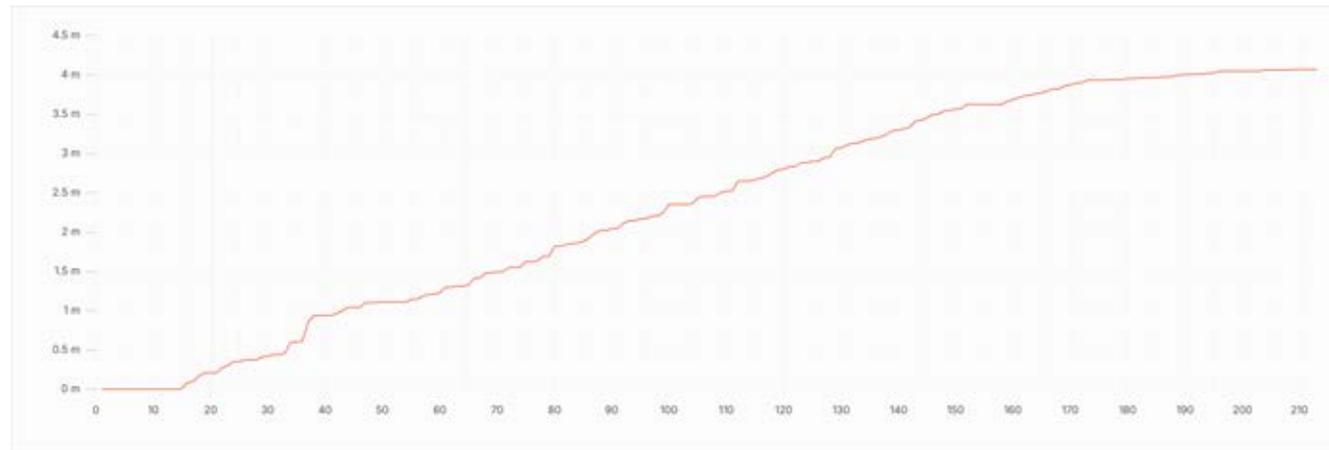
14.03 m  
Column

1.52 m  
Primer

88.9 mm  
Diameter

Elapsed Time (from first hole): 0.00 ms

	Start	End	Total
Time	0.00 ms	0.83 ms	0.83 ms
Length	5.42 m	4.07 m	1.35 m



	Expected	Actual	Difference
Hole	15.25 m	1.35 m	13.90 m
Column	14.03 m	4.07 m	9.96 m

# Zone

Name

**Column**

VoD

**5578.7 m/s**

Start

**0.051 ms**

**0.000 m**

End

**0.83 ms**

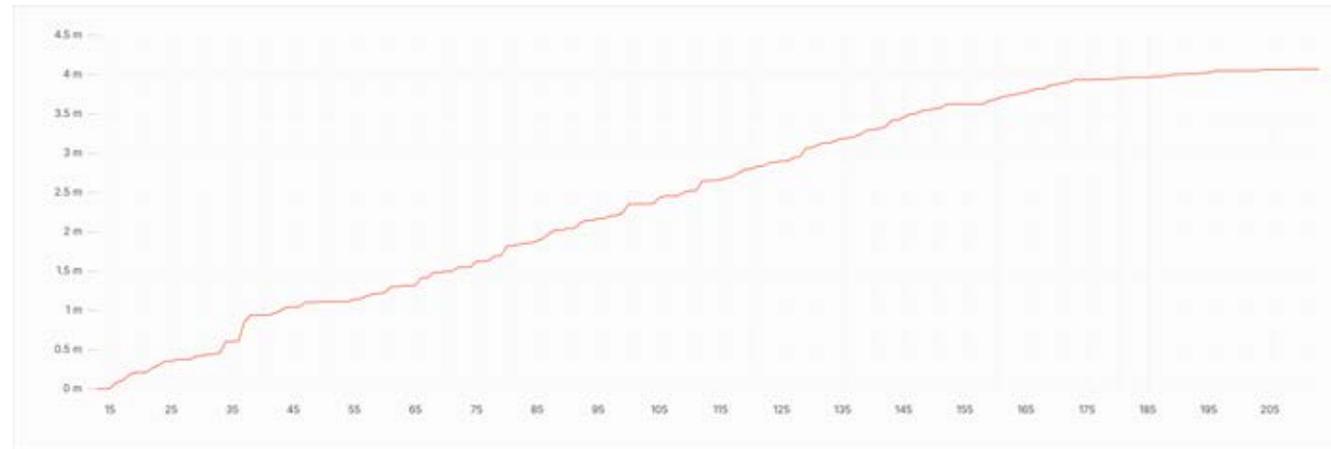
**4.070 m**

Total

**0.781 ms**

**4.070 m**

Cable Length



**ATTACHMENT 4:**

# **DAILY REPORTS**



**Completed Tasks Summary:**

Location	Work Completed
Admin	Site Specific Training Planned for the week Final review of CoeurAK provided documents

**General Observations:** Site is in great and safe condition.

**Work Tasks Remaining:** Commence underground audit.

**Additional Observations:** None at this time

**SUMMARY OF CONCERNS:** None at this time.

**WSP Field Engineer:** Ryan Sibley

**Date:** 07/22/2025

<p><b>PHOTO 1</b> No photos for Day 1</p>	
-----------------------------------------------	--



**Completed Tasks Summary:**

Location	Work Completed
Admin	Kickoff meeting with Coeur Blasting Team
Underground	Inspected a variety of shot stopes One stope was hung and bridged One had poor ring pull on final rings Others performed well Inspected drilled development Holes were well placed Minimal to no boot from previous round Minimal deviation (qualitative) Holes boundaries were very consistent Observed loading of development

**General Observations:** Site is in great and safe condition.

**Work Tasks Remaining:** Commence underground audit.

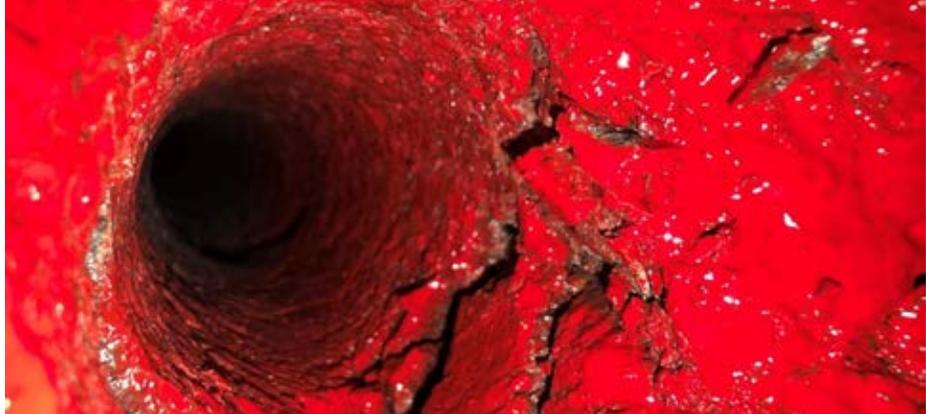
**Additional Observations:** None at this time

**SUMMARY OF CONCERNS:** None at this time.

**WSP Field Engineer:** Ryan Sibley

**Date:** 07/22/2025

<p><b>PHOTO 1</b> Location: K1625-098 Type: Top of Stope</p>	
<p><b>PHOTO 2</b> Location: K1625-098 Type: Top of Stope</p>	
<p><b>PHOTO 3</b> Location: 1 Type: Development</p> <p>Crushing in back of boot and slight radial fracturing.</p>	

<p><b>PHOTO 4</b> Location: 2 Type: Development</p> <p>Drill pattern on development heading. Well drilled and evenly spaced pattern.</p>	
<p><b>PHOTO 5</b> Location: 2 Type: Development</p> <p>Downhole view of borehole showing clean boundaries.</p>	
<p><b>PHOTO 5</b> Location: 2 Type: Development</p> <p>Downhole view of borehole showing slight fracturing and small cavities around boundaries.</p>	

**PHOTO 7**  
Location: 2  
Type: Development  
  
Downhole view of borehole showing slight fracturing and small cavities around boundaries



**PHOTO 8**  
Location: 2  
Type: Development  
  
Downhole view of borehole showing slight fracturing and small cavities around boundaries

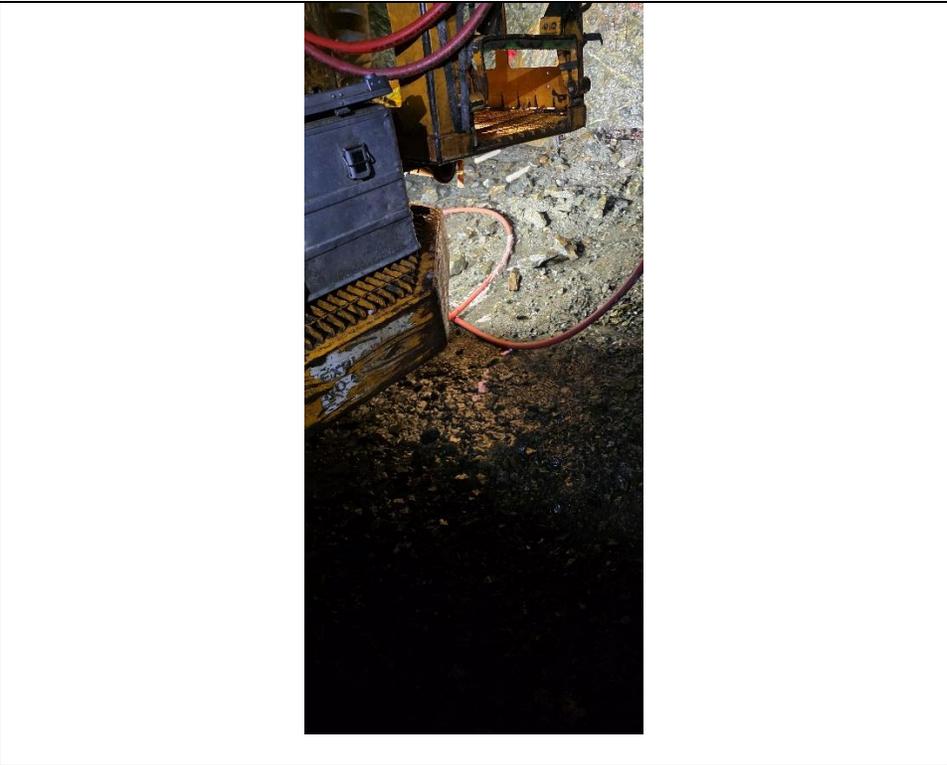


<p><b>PHOTO 9</b> Location: 3 Type: Development</p> <p>Leftover emulsion chub in upper right corner of heading</p>	
<p><b>PHOTO 10</b> Location: 3 Type: Development</p> <p>Right rib showing excessive water</p>	

**PHOTO 11**  
Location: 3  
Type: Development  
Powder wagon set-up at face



**PHOTO 12**  
Location: 3  
Type: Development  
Emulsion spillage



**PHOTO 13**  
Location: 3  
Type: Development  
  
Right rib showing excessive water



**PHOTO 14**  
Location: 3  
Type: Development  
  
Upper hole 1 displaying emulsion seepage



**PHOTO 15**  
Location: 3  
Type: Development  
  
Hole 2 showing emulsion seepage and the powder has fallen from the collar



**PHOTO 16**  
Location: 3  
Type: Development  
  
Upper hole 1 displaying emulsion seepage



**PHOTO 17**  
Location: 3  
Type: Development  
  
Upper hole 1 displaying emulsion seepage



**PHOTO 18**  
Location: 3  
Type: Development  
  
Hole 2 showing emulsion seepage and the powder has fallen from the collar





**Completed Tasks Summary:**

Location	Work Completed
Admin	Reviewal of stope binders
Underground	Set-up VOD Monitoring in Stope K1555-083 Slot timing was changed to 350ms VOD was installed in hole 0 and 6 Inspected drilled development 2495-246 and 2495-254, Dev 3, and 2720 Holes were well placed Minimal to no boot from previous round, those that were present did have crushing and radial fracturing Faces were dry and loaded with all bulk powder Floor holes were loaded beyond rock collar Excess powder loaded in reamer holes and not primed Significant carbon staining and misfired powder was observed Observed drilling of stope All drilling was performed well

**General Observations:** Site is in great and safe condition.

**Work Tasks Remaining:** Continue underground audit.

**Additional Observations:** None at this time

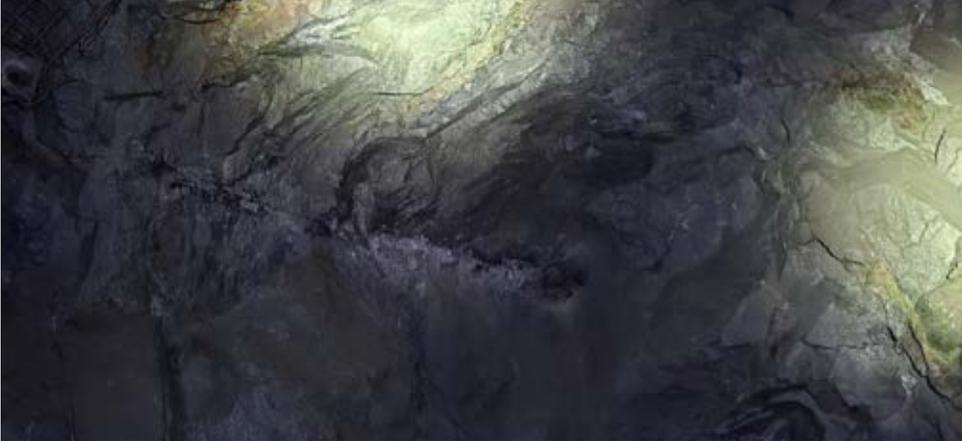
**SUMMARY OF CONCERNS:** None at this time.

**WSP Field Engineer:** Ryan Sibley

**Date:** 07/22/2025

<p><b>PHOTO 1</b> Location: K1555-083 Type: Top of Stope VOD Cable Hook-up</p>	
<p><b>PHOTO 2</b> Location: K1555-083 Type: Top of Stope VOD Cable Hook-up</p>	
<p><b>PHOTO 3</b> Location: 2495-246 Type: Development Loaded face</p>	

<p><b>PHOTO 3</b> Location: 2495-246 Type: Development</p> <p>Boot that shows significant crushing and slight radial fracturing</p>	 A close-up photograph of a rock surface. A bright red paint is applied to a section of the rock, which appears to be a boot or a specific area of interest. A yellow cable or wire runs horizontally across the image, passing over the red-painted area. The rock surface is dark and shows signs of crushing and fracturing.
<p><b>PHOTO 4</b> Location: 2495-246 Type: Development</p> <p>Boot that shows significant crushing and slight radial fracturing</p>	 A close-up photograph of a rock surface. A dark, circular hole is visible in the center of the frame. The rock surface is dark and shows signs of crushing and fracturing. The lighting is somewhat dim, highlighting the texture of the rock.
<p><b>PHOTO 5</b> Location: 2495-246 Type: Development</p> <p>Boot that shows significant crushing and slight radial fracturing</p>	 A close-up photograph of a rock surface. A dark, circular hole is visible in the center of the frame. To the right of the hole, there is a red-painted area. The rock surface is dark and shows signs of crushing and fracturing. The lighting is somewhat dim, highlighting the texture of the rock.

<p><b>PHOTO 6</b> Location: K1555-083 Type: Top of Stope  Loading R2</p>	
<p><b>PHOTO 7</b> Location: 2720 Type: Development  Carbon Staining in Upper Corners</p>	
<p><b>PHOTO 8</b> Location: 2720 Type: Development  Carbon Staining in Upper Corners</p>	

**PHOTO 8**  
Location: 2720  
Type: Development  
  
Carbon Staining in  
Upper Corners



**PHOTO 8**  
Location: 3  
Type: Development  
  
Bolter Set-up



**PHOTO 8**  
Location: 3  
Type: Development  
  
Misfired emulsion in  
Half barrel



**PHOTO 9**  
Location: 3  
Type: Development  
  
Full Round view



**PHOTO 10**  
Location: 3  
Type: Development  
  
Boot that shows  
minimal crushing or  
radial fracturing



**PHOTO 11**  
Location: 1  
Type: Stope  
Stope Set-up



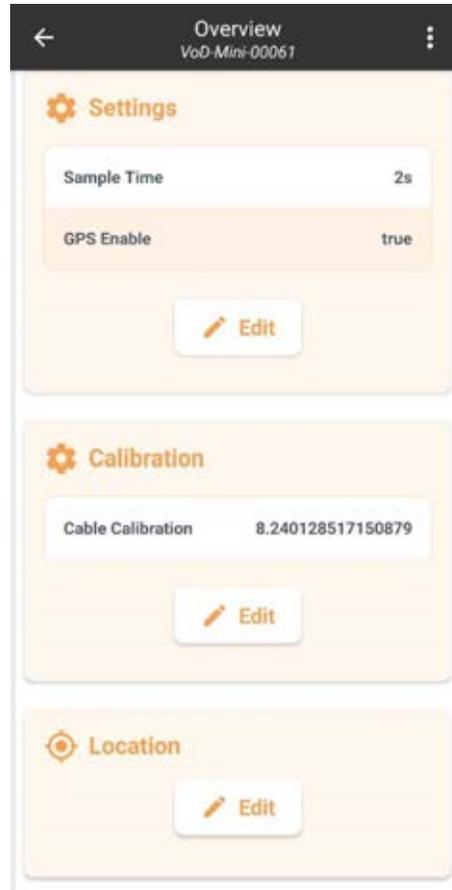
**PHOTO 11**  
Location: K1555-083  
Type: Top of Stope  
VOD Cable Hook-up  
hole 6



**PHOTO 12**  
Location: K1555-083  
Type: Top of Stope  
VOD Cable Hook-up  
hole 1



**PHOTO 13**  
Location: K1555-083  
Type: VOD  
VOD Calibration



**PHOTO 14**  
Location: K1555-083  
Type: VOD  
VOD Set-up location





**Completed Tasks Summary:**

Location	Work Completed
Admin	Review of stope binder and notes for the day Developing a potential plan ahead for minimizing wastage
Underground	Inspected a stope: K1555-083 Ring 1 shot poorly. Significant indication of misfires and poor blast performance Ring 2 showed similar characteristics. Underbreak on low ring side Boretraked a stope: E1120-202 Data indicated minimal deviation and in the same manner for all holes Deviation matched that provided by CoeurAK to WSP prior to the site visit Inspected drilled, shot, and loaded development Holes were well placed Holes boundaries were very consistent Multiple indications of previous misfires Multiple boots showed no sign of detonation Observed drilling of stopes Drillers completed tasks as appropriate and instructed No issues were observed

**General Observations:** Site is in great and safe condition.

**Work Tasks Remaining:** Continue underground audit.

**Additional Observations:** None at this time

**SUMMARY OF CONCERNS:** None at this time.

**WSP Field Engineer:** Ryan Sibley

**Date:** 07/22/2025

**PHOTO 1**  
Location: K1555-083  
Type: Bottom of Stope

Fragmentation pile on upper side. Well fragmented and loose appearance



**PHOTO 2**  
Location: K1555-083  
Type: Bottom of Stope

Fragmentation pile on upper side. Well fragmented and loose appearance



**PHOTO 3**  
Location: K1555-083  
Type: Top of Stope

Carbon staining in R2 and half barrel in R1.



<p><b>PHOTO 4</b> Location: K1555-083 Type: Top of Stope</p> <p>Carbon staining in R2 and half barrel in R1, that show varied crushing</p>	 A vertical photograph of a dark, rocky stope. A bright yellow light source illuminates a large, dark, irregularly shaped object (a half barrel) embedded in the rock. The surrounding rock surface shows some carbon staining and varied textures. A person in a red shirt is visible in the lower left corner for scale.
<p><b>PHOTO 5</b> Location: K1555-083 Type: Top of Stope</p> <p>3 half barrels in R1 showing varied crushing and disappearance into unbroken material.</p>	 A vertical photograph of a dark, rocky stope. A bright yellow light source illuminates a section of the rock face. Three half barrels are visible, showing varying degrees of crushing and some appearing to be partially embedded or 'disappeared' into the surrounding unbroken material. The rock surface is highly textured and fractured.

<p><b>PHOTO 6</b> Location: K1555-083 Type: Top of Stope</p> <p>Carbon staining in R2 and half barrels in R1, that show varied crushing.</p>	
<p><b>PHOTO 7</b> Location: 2495-254 Type: Development</p> <p>Boot that shows slight radial fracturing</p>	

**PHOTO 8**  
Location: 2495-254  
Type: Development  
  
Multiple boots that shows no crushing or radial fracturing



**PHOTO 9**  
Location: ?  
Type: ?  
  
?





## DAILY FIELD REPORT

**DATE** July 26, 2025

**Project No.** US-WSP-31405631.1516

**FROM** Ryan Sibley – WSP USA

**EMAIL** ryan.sibley1@wsp.com

### DAILY FIELD REPORT SUMMARY

**PROJECT:** Coeur AK – TTF Outflow Task 002 Blasting Audit

**WSP PROJECT NO:** US-WSP-31405631.1516

**OWNER:** Coeur Alaska

**SUBCONTRACTORS:** Thoroughbred Drill and Blast Consultants – Gabriel Milliron on-site

**LOCATION:** Juneau, Alaska

**WORK ELEMENT:** Underground Drill & Blast Audit

**WEEKDAY:** (Sa) Su Mo Tu We Th Fr

**TEMPERATURE (°F):** LOW: 47°F HIGH: 66°F

**PRECIPITATION:** AM: N/A PM: N/A TOTAL: N/A

**CLOUD COVER:** Cloudy **WIND:** ESE 6 mph

**WSP PERSONNEL HOURS ON SITE:** Staying on-site in man camp

**OTHERS ON SITE:** Staying on-site in man camp

### SUMMARY OF PROGRESS:

**09:00AM** WSP/TDBC head UG to inspect stopes and faces

**011:30AM** WSP/TDBC boretrak slot of E1180-202

**12:45PM** WSP/TDBC inspect faces in -200

**03:30PM** WSP/TDBC back topside.

**05:00PM** WSP/TDBC review stope binders for observed UG stopes.

**Completed Tasks Summary:**

Location	Work Completed
Admin	Review of stope binder and notes for the day Developing a potential plan ahead for minimizing wastage
Underground	Boretraked stope slot – 1180-202 One stope was hung and bridged One had poor ring pull on final rings Others performed well Inspected drilled/blasted development Holes were well placed Minimal to no boot from previous round Minimal deviation (qualitative) Holes boundaries were very consistent Observed loading of development

**General Observations:** Site is in great and safe condition.

**Work Tasks Remaining:** Continue underground audit.

**Additional Observations:** None at this time

**SUMMARY OF CONCERNS:** None at this time.

**WSP Field Engineer:** Ryan Sibley

**Date:** 07/22/2025

<p><b>PHOTO 1</b> Location: E1180-202 Type: Stope</p> <p>Boretrak hole Locations</p>	 <p>The image shows a smartphone screen displaying the Boretrak application. The screen features a grid overlay on a dark background. A semi-circular arc is drawn across the grid. Text labels for various holes and their corresponding times are displayed within the grid. The labels include: Hole-12, Hole-11, Hole-09, Hole-10, Hole-08, and Hole-13. Times listed are 02:03, 03:03, 01:03, 02:02, 03:02, 01:02, and 02:01. The application interface also shows a scale at the bottom with markings for 12.5 and 25.0.</p>
<p><b>PHOTO 2</b> Location: E1180-202 Type: Stope</p> <p>Boretrak hole Locations</p>	 <p>The image shows the interior of a stope, which is a large, dark, and somewhat irregularly shaped excavation. The walls are made of rough, grey rock. In the center of the stope, there is a rectangular opening, likely a Boretrak hole. Several red markers or cones are placed on the ground around the hole. A person's legs and feet, wearing yellow safety boots, are visible in the bottom foreground. The lighting is dim, with a bright light source illuminating the central area.</p>

**PHOTO 3**  
Location: E1180-202  
Type: Stope  
  
Boretrak operation



**PHOTO 4**  
Location: KN200  
Type: Development  
  
Drillhole locations painted





**Completed Tasks Summary:**

Location	Work Completed
Admin	Review of stope binder and notes for the day Developing a potential plan ahead for minimizing wastage
Underground	Boretraked stope rings 1-4 – 2345-262 Inspected stope 1625-098 Inspected drilled/blasted development Holes were well placed Minimal to no boot from previous round Minimal deviation (qualitative) Holes boundaries were very consistent Observed loading of development

**General Observations:** Site is in great and safe condition.

**Work Tasks Remaining:** Commence underground audit.

**Additional Observations:** None at this time

**SUMMARY OF CONCERNS:** None at this time.

**WSP Field Engineer:** Ryan Sibley

**Date:** 07/22/2025

<p><b>PHOTO 1</b> Location: 1625-098 Type: Bottom of Stope</p> <p>Tight muckpile varied fragmentation</p>			
<p><b>PHOTO 2</b> Location: 1625-098 Type: Bottom of Stope</p> <p>Tight muckpile varied fragmentation</p>			

<p><b>PHOTO 3</b> Location: 2345-262 Type: Stope  Boretrak set-up</p>	
<p><b>PHOTO 4</b> Location: KN200 Type: Development  Drillhole locations painted</p>	



**Completed Tasks Summary:**

Location	Work Completed
Admin	Review of stope binder and notes for the day Developing a potential plan ahead for minimizing wastage
Underground	Inspected drilled/blasted development 2720, 2795, 2125-102 Holes were well placed Minimal to no boot from previous round Minimal deviation (qualitative) Holes boundaries were very consistent Inspected emulsion tanks and found no indication of improper storage or crystallization

**General Observations:** Site is in great and safe condition.

**Work Tasks Remaining:** Commence underground audit.

**Additional Observations:** None at this time

**SUMMARY OF CONCERNS:** None at this time.

**WSP Field Engineer:** Ryan Sibley

**Date:** 07/22/2025

<p><b>PHOTO 1</b> Location: 2720-1 Type: Development</p> <p>Crushing around borehole boots indicating proper detonation</p>	
<p><b>PHOTO 2</b> Location: 2720-2 Type: Development</p> <p>Crushing around borehole boots indicating proper detonation</p>	
<p><b>PHOTO 3</b> Location: 2795-slab Type: Development</p> <p>Crushing around borehole boots indicating proper detonation</p>	

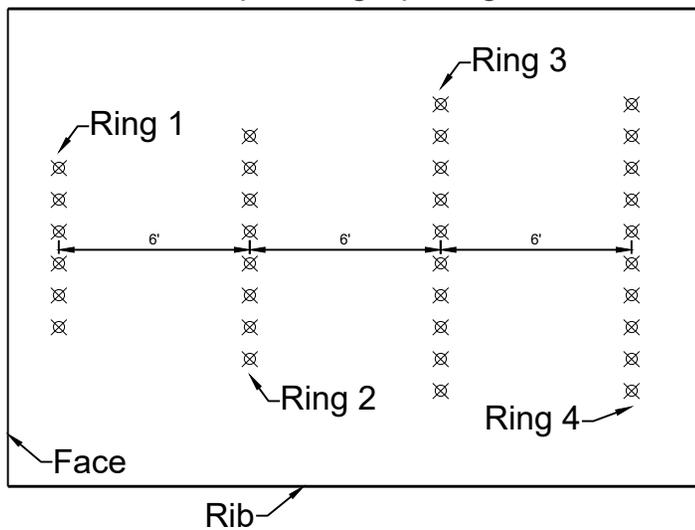
<p><b>PHOTO 4</b> Location: 2795-1  Type: Development  Crushing around borehole boots indicating proper detonation</p>	
<p><b>PHOTO 5</b> Location: Emulsion Magazine Type: Tank  Homogenous Mixture displayed</p>	

<p><b>PHOTO 6</b> Location: Emulsion Magazine Type: Tank</p> <p>Homogenous Mixture displayed</p>			
<p><b>PHOTO 7</b> Location: Emulsion Magazine Type: Tank</p> <p>Deteriorated explosive on tank lid</p>			

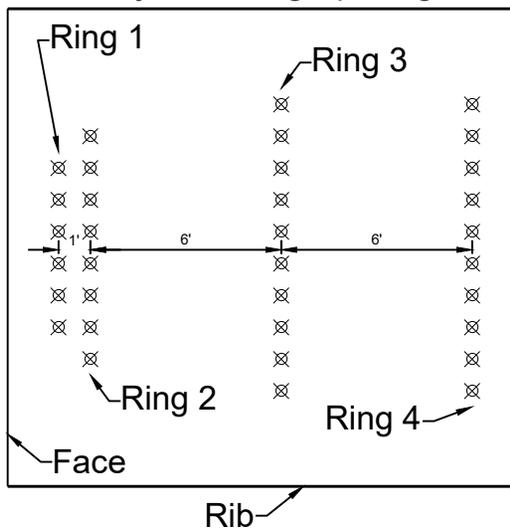
**ATTACHMENT 5:**

# **ALTERNATIVE RING COLLAR DESIGN**

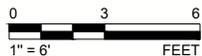
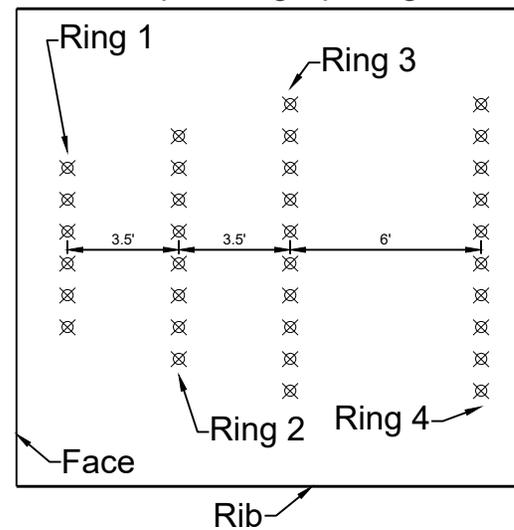
### Fully Advanced Development Equal Ring Spacing



### Short Development Adjusted Ring Spacing



### Short Development Equal Ring Spacing



CLIENT  
Coeur Alaska - Kensington Mine



PROJECT  
Nitrogen Source Control Outfall 002

NOTE(S)  
 • Intra-row collar distances should be kept as near to typical as safely possible

CONSULTANT



YYYY-MM-DD	8/15/2025
DESIGNED	NS
PREPARED	RS
REVIEWED	NR
APPROVED	NH

TITLE  
Dump Ring Alternative Collar Design

PROJECT NO. CONTROL  
US-WSP-31405634-1516

REV.  
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FIG.  
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**ATTACHMENT 2**

**Mill Process Water Quality and  
Flow**

**ATTACHMENT 2  
MILL PROCESS WATER QUALITY AND FLOW**

Mill Process Location	Date	Flow(gpm)	NH3 - N mg/L	NO3 - N mg/L	NO2 - N mg/L
<b>Pre-Blasting Change</b>					
Mill Feed	6/12/2025	377	17.4	40.3	0.486
Tails Thickener U/F	6/12/2025		17.1	39	0.429
Tails Thickener O/F	6/12/2025		24.9	47.1	0.506
Mill Feed	6/19/2025	376	11.2	32.8	0.372
Tails Thickener U/F	6/19/2025				
Tails Thickener O/F	6/19/2025		16.6	48.8	0.537
Mill Feed	6/25/2025	378	23.2	51.7	0.414
Tails Thickener U/F	6/25/2025		26.6	59.5	0.403
Tails Thickener O/F	6/25/2025		27.1	61	0.427
Mill Feed	6/26/2025	377	16	40.2	0.418
Tails Thickener U/F	6/26/2025		19.5	51.1	0.521
Tails Thickener O/F	6/26/2025		19.8	52	0.534
Mill Feed	7/7/2025	377	11.5	31	0.513
Tails Thickener U/F	7/7/2025		17	47.4	0.815
Tails Thickener O/F	7/7/2025		17.8	48.4	0.815
Mill Feed	7/8/2025	377	15.2	39.2	0.648
Tails Thickener U/F	7/8/2025		21.2	56.5	0.953
Tails Thickener O/F	7/8/2025		21.5	57.3	0.982
Mill Feed	7/15/2025	378	13.6	27.3	1.19
Tails Thickener U/F	7/15/2025		19	49.7	0.785
Tails Thickener O/F	7/15/2025		19.1	51.6	0.81
Mill Feed	7/17/2025	379	10.2	22.2	0.486
Tails Thickener U/F	7/17/2025		15.7	35.6	0.648
Tails Thickener O/F	7/17/2025		15.9	36.2	0.636
Mill Feed	12/1/2025	377	0.085	13.2	0.223
Tails Thickener U/F	12/1/2025		10.6	37.3	0.432
Tails Thickener O/F	12/1/2025		10.7	37.4	0.512
Mill Feed	12/2/2025	377	<0.030	14.4	<0.050
Tails Thickener U/F	12/2/2025		11.3	42.4	0.589
Tails Thickener O/F	12/2/2025		11.6	43.1	0.618
Mill Feed	12/4/2025	378	0.072	13	<0.050
Tails Thickener U/F	12/4/2025		14	47.2	0.703
Tails Thickener O/F	12/4/2025		11.1	46.4	0.709
Mill Feed	12/15/2025	380	0.523	13.2	0.73
Tails Thickener U/F	12/15/2025		18.9	61.4	0.587
Tails Thickener O/F	12/15/2025		15.7	49.9	0.478
Mill Feed	12/17/2025	380	0.458	12.5	0.708
Tails Thickener U/F	12/17/2025		17.5	62.2	0.557
Tails Thickener O/F	12/17/2025		17.9	61.4	0.55

**ATTACHMENT 2  
MILL PROCESS WATER QUALITY AND FLOW**

Mill Process Location	Date	Flow(gpm)	NH3 - N mg/L	NO3 - N mg/L	NO2 - N mg/L
<b>Post Blasting Change</b>					
Mill Feed	1/22/2026	380	1.05	13.3	<0.050
Tails Thickener U/F	1/22/2026		13.6	41.9	0.0442
Tails Thickener O/F	1/22/2026		13.8	42.2	0.46
Mill Feed	1/29/2026	377	0.746	13.1	<0.050
Tails Thickener U/F	1/29/2026		18.4	52.2	0.526
Tails Thickener O/F	1/29/2026		18.3	53.4	0.533
Mill Feed	2/18/2026	377	1.12	12.1	<0.050
Tails Thickener U/F	2/18/2026		9.71	28.2	0.394
Tails Thickener O/F	2/18/2026		9.57	29.3	0.381

## Notes:

Mill Feed – Feed to Mill process after comingling of makeup water with tails thickener and concentrates thickener overflow reclaims

Tails Thickener U/F – Underflow of tails thickener in the Mill (settled sample decant water)

Tails Thickener O/F – Overflow of tails thickener in the Mill (reclaim to Mill feed prior to comingling with other makeup water)

If result is below MDL, load calculations done by using half of the detection limit

**ATTACHMENT 3**

**Jualin Portal Water Flow**

**ATTACHMENT 3  
JUALIN PORTAL WATER FLOW**

Date	Total Jualin gpm	Jualin to UG/Comet (>18 hrs in shift)	Jualin to TTF (>18hrs in a shift)
1/1/2025	297.6		
1/2/2025	293.9555556		
1/3/2025	291.3333333		
1/4/2025	282.1236111		
1/5/2025	327.7604167		
1/6/2025	327.7604167		
1/7/2025	216.4888889		
1/8/2025	281.8222222		
1/9/2025	291.8222222		
1/10/2025	287.2888889		
1/11/2025	290.7111111		
1/12/2025	292.9777778		
1/13/2025	301.6444444		
1/14/2025	309.6		
1/15/2025	314.5916667		
1/16/2025	292.2972222		
1/17/2025	299.7333333		
1/18/2025	299.6888889		
1/19/2025	303.2888889		
1/20/2025	276.5333333		
1/21/2025	299.2		
1/22/2025	303.1555556		
1/23/2025	300		
1/24/2025	299.2888889		
1/25/2025	304.1333333		
1/26/2025	297.9111111		
1/27/2025	250.5555556		
1/28/2025	352.2444444		
1/29/2025	300.8		
1/30/2025	616.4888889		
1/31/2025	285.9555556		
2/1/2025	264.5333333		
2/2/2025	306.4444444		
2/3/2025	-15.59027778		
2/4/2025	303.2347222		
2/5/2025	275.0666667		
2/6/2025	278.0111111		
2/7/2025	251.5444444		
2/8/2025	263.35		
2/9/2025	263.5388889		
2/10/2025	248.4888889		
2/11/2025	248.4888889		
2/12/2025	254.1777778		



**ATTACHMENT 3  
JUALIN PORTAL WATER FLOW**

Date	Total Jualin gpm	Jualin to UG/Comet (>18 hrs in shift)	Jualin to TTF (>18hrs in a shift)
2/13/2025	250.1333333		
2/14/2025	233.4222222		
2/15/2025	242.7111111		
2/16/2025	228.0888889		
2/17/2025	241.8222222		
2/18/2025	226.4888889		
2/19/2025	231.1111111		
2/20/2025	0		
2/21/2025	459.6888889		
2/22/2025	451.2		
2/23/2025	224.8611111		
2/24/2025	225.7611111		
2/25/2025	230.1777778		
2/26/2025	224.8888889		
2/27/2025	224.8888889		
2/28/2025	0		
3/1/2025	480.7138889		
3/2/2025	240.0416667		
3/3/2025	238.5777778		
3/4/2025	243.7333333		
3/5/2025	242.2666667		
3/6/2025	245.3777778		
3/7/2025	236.1777778		
3/8/2025	249.4666667		
3/9/2025	249.4222222		
3/10/2025	209.0277778		
3/11/2025	40.79444444		
3/12/2025	249.1555556		
3/13/2025	248.5777778		
3/14/2025	248.7555556		
3/15/2025	229.8243056		
3/16/2025	258.4868056		
3/17/2025	462.4444444		
3/18/2025	243.5111111		
3/19/2025	241.3777778		
3/20/2025	239.9111111		
3/21/2025	235.73125		
3/22/2025	238.5354167		
3/23/2025	240.0444444		
3/24/2025	250.5333333		
3/25/2025	234.2666667		
3/26/2025	240.1777778		
3/27/2025	239.9555556		
3/28/2025	242.2222222		



**ATTACHMENT 3  
JUALIN PORTAL WATER FLOW**

Date	Total Jualin gpm	Jualin to UG/Comet (>18 hrs in shift)	Jualin to TTF (>18hrs in a shift)
3/29/2025	239.5555556		
3/30/2025	0		
3/31/2025	239.2444444		
4/1/2025	249.2444444		
4/2/2025	235.6888889		
4/3/2025	234.8444444		
4/4/2025	238.0444444		
4/5/2025	240.3555556		
4/6/2025	241.4222222		
4/7/2025	209.0666667		
4/8/2025	198.3111111		
4/9/2025	230.2222222		
4/10/2025	355.3777778		
4/11/2025	480.6222222		
4/12/2025	452.5333333		
4/13/2025	431.0222222		
4/14/2025	351.4222222		
4/15/2025	262.5777778		
4/16/2025	523.9555556		
4/17/2025	261.2444444		
4/18/2025	272		
4/19/2025	274.7555556		
4/20/2025	273.1555556		
4/21/2025	276.7555556		
4/22/2025	279.3777778		
4/23/2025	296.8444444		
4/24/2025	297.4222222		
4/25/2025	303.4666667		
4/26/2025	297.1555556		
4/27/2025	626.6222222		
4/28/2025	-459301.3333		
4/29/2025	0		
4/30/2025	459604.7556		
5/1/2025	305.3333333		
5/2/2025	315.1111111		
5/3/2025	313.7333333		
5/4/2025	345.7777778		
5/5/2025	282.8		
5/6/2025	320.1777778		
5/7/2025	285.7777778		
5/8/2025	329.2888889		
5/9/2025	323.5555556		
5/10/2025	329.5555556		
5/11/2025	330.7555556		



**ATTACHMENT 3  
JUALIN PORTAL WATER FLOW**

Date	Total Jualin gpm	Jualin to UG/Comet (>18 hrs in shift)	Jualin to TTF (>18hrs in a shift)
5/12/2025	294.8		
5/13/2025	645.5555556		
5/14/2025	307.6		
5/15/2025	402.0444444		
5/16/2025	222.2666667		
5/17/2025	316.0111111		
5/18/2025	309.1		
5/19/2025	630.4444444		
5/20/2025	314.5333333		
5/21/2025	315.9111111		
5/22/2025	302.9777778		
5/23/2025	304.8444444		
5/24/2025	304.2666667		
5/25/2025	304.4444444		
5/26/2025	326.9777778		
5/27/2025	289.0222222		
5/28/2025	305.0222222		
5/29/2025	312.4		
5/30/2025	312.1333333		
5/31/2025	309.1555556		
6/1/2025	304.9777778		
6/2/2025	311.2444444		
6/3/2025	306.5777778		
6/4/2025	306.5777778		
6/5/2025	321.6		
6/6/2025	305.4222222		
6/7/2025	328.4888889		
6/8/2025	7444713.6		
6/9/2025	288.9368056		
6/10/2025	324.2618056		
6/11/2025	644.225		
6/12/2025	329.6520833		
6/13/2025	330.3180556		
6/14/2025	332.2381944		
6/15/2025	0		
6/16/2025	333.9854167		
6/17/2025	342.23125		
6/18/2025	168.45625		
6/19/2025	1364.317361		
6/20/2025	242.6381944		
6/21/2025	103.5486111		
6/22/2025	215.0902778		X
6/23/2025	519.1229167		X
6/24/2025	281.5555556		X



**ATTACHMENT 3  
JUALIN PORTAL WATER FLOW**

Date	Total Jualin gpm	Jualin to UG/Comet (>18 hrs in shift)	Jualin to TTF (>18hrs in a shift)
6/25/2025	305.4222222		X
6/26/2025	276.4444444		X
6/27/2025	297.4666667		X
6/28/2025	288.7555556		X
6/29/2025	306.5333333		X
6/30/2025	282.5333333		X
7/1/2025	289.5555556		X
7/2/2025	249.7777778		X
7/3/2025	217.5555556		X
7/4/2025	309.6888889		X
7/5/2025	313.2888889		X
7/6/2025	302.3111111		X
7/7/2025	337.9555556		X
7/8/2025	297.8222222		X
7/9/2025	298.4		X
7/10/2025	298.9777778		X
7/11/2025	298.8		X
7/12/2025	329.3777778		X
7/13/2025	343.0222222		X
7/14/2025	336.9333333		X
7/15/2025	329.0666667		X
7/16/2025	410.0444444		X
7/17/2025	270.2222222		X
7/18/2025	332.9777778		X
7/19/2025	13.57777778		X
7/20/2025	722.1111111		X
7/21/2025	14.54652778		X
7/22/2025	617.8979167		X
7/23/2025	281.1555556		X
7/24/2025	0		X
7/25/2025	296.5777778		X
7/26/2025	500.1777778		X
7/27/2025	747.7763889	X	X
7/28/2025	707.2458333	X	X
7/29/2025	476.0444444		
7/30/2025	299.7333333		
7/31/2025	313.3333333		
8/1/2025	533.2888889		
8/2/2025	572.4444444		
8/3/2025	299.7777778		
8/4/2025	306.7569444		
8/5/2025	328.5506944		x
8/6/2025	327.3409722		x
8/7/2025	325.2597222		x



**ATTACHMENT 3  
JUALIN PORTAL WATER FLOW**

Date	Total Jualin gpm	Jualin to UG/Comet (>18 hrs in shift)	Jualin to TTF (>18hrs in a shift)
8/8/2025	327.7368056		x
8/9/2025	327.6076389		x
8/10/2025	367.8520833		x
8/11/2025	381.8340278		x
8/12/2025	366.9118056		x
8/13/2025	305.4		x
8/14/2025	369.9020833		x
8/15/2025	407.6756944		x
8/16/2025	331.0131944		x
8/17/2025	412.4277778		x
8/18/2025	357.775		x
8/19/2025	331.1111111		x
8/20/2025	330.9777778		x
8/21/2025	450.4888889		x
8/22/2025	452		x
8/23/2025	322.9333333		x
8/24/2025	726.0888889		x
8/25/2025	289.6444444		x
8/26/2025	318.1333333		x
8/27/2025	314.9333333		x
8/28/2025	321.0666667		x
8/29/2025	325.9555556		x
8/30/2025	763.0222222		x
8/31/2025	286.5333333		x
9/1/2025	279.0666667		x
9/2/2025	310.7111111		x
9/3/2025	306.3111111		x
9/4/2025	390.7111111		x
9/5/2025	264.4444444		x
9/6/2025	310.0888889		x
9/7/2025	316.5777778		x
9/8/2025	272.3111111		x
9/9/2025	423.0805556		x
9/10/2025	296.3861111		x
9/11/2025	304.025		x
9/12/2025	315.4416667		x
9/13/2025	306.4888889		x
9/14/2025	440.0888889	x	
9/15/2025	315.6	x	
9/16/2025	318.2708333		x
9/17/2025	316.9736111		x
9/18/2025	375.6444444		x
9/19/2025	308.1777778		x
9/20/2025	346.4444444		x



**ATTACHMENT 3  
JUALIN PORTAL WATER FLOW**

Date	Total Jualin gpm	Jualin to UG/Comet (>18 hrs in shift)	Jualin to TTF (>18hrs in a shift)
9/21/2025	318.5333333		x
9/22/2025	335.8388889		x
9/23/2025	326.65		x
9/24/2025	401.0666667		x
9/25/2025	478.8097222		x
9/26/2025	708.9236111		x
9/27/2025	256.91875		x
9/28/2025	605.6590278	X	
9/29/2025	376.2673611	X	
9/30/2025	0	X	
10/1/2025	0	X	
10/2/2025	1082.315972	X	
10/3/2025	329.0902778	X	
10/4/2025	0	X	
10/5/2025	634.5715278	X	
10/6/2025	319.2222222	X	
10/7/2025	308.8173611	X	
10/8/2025	156.7944444	X	
10/9/2025	171.7013889	X	
10/10/2025	181.4423611	X	
10/11/2025	187.7847222	X	
10/12/2025	736.4368056	X	
10/13/2025	466.1333333		
10/14/2025	215.3333333		
10/15/2025	0		
10/16/2025	420.1777778		
10/17/2025	327.0222222		
10/18/2025	339.1111111		
10/19/2025	332.5333333		
10/20/2025	330		
10/21/2025	328.3111111		
10/22/2025	330.9333333		
10/23/2025	339.6055556		
10/24/2025	344.2166667		
10/25/2025	316.0444444		
10/26/2025	311.3333333		
10/27/2025	285.6736111		
10/28/2025	316.0152778	X	
10/29/2025	341.9958333	X	
10/30/2025	286.8930556	X	
10/31/2025	340.8979167	X	
11/1/2025	364.2729167	X	
11/2/2025	338.0104167	X	
11/3/2025	335.7520833	X	



**ATTACHMENT 3  
JUALIN PORTAL WATER FLOW**

Date	Total Jualin gpm	Jualin to UG/Comet (>18 hrs in shift)	Jualin to TTF (>18hrs in a shift)
11/4/2025	343.7715278	X	
11/5/2025	337.5618056	X	
11/6/2025	325.4666667	X	
11/7/2025	316.9548611	X	
11/8/2025	322.29375	X	
11/9/2025	315.83125	x	
11/10/2025	334.2090278		
11/11/2025	332.7111111		
11/12/2025	355.4222222		
11/13/2025	374.4		
11/14/2025	317.4222222		
11/15/2025	338.7555556		
11/16/2025	332.9333333		
11/17/2025	334.1777778		
11/18/2025	332.8444444		
11/19/2025	419.2888889		
11/20/2025	280.4888889		
11/21/2025	370.6222222		
11/22/2025	393.5555556		
11/23/2025	336.1777778		
11/24/2025	423.36875		
11/25/2025	449.7958333	x	
11/26/2025	449.7958333	x	
11/27/2025	449.7965278	x	
11/28/2025	486.1020833	x	
11/29/2025	636.5402778	x	
11/30/2025	632.4090278	x	
12/1/2025	638.5458333	x	
12/2/2025	779.2479167	x	
12/3/2025	478.4472222	x	
12/4/2025	654.6729167	x	
12/5/2025	637.0930556	x	
12/6/2025	658.2944444		
12/7/2025	0		
12/8/2025	1393.579167		
12/9/2025	572.8444444		
12/10/2025	597.5555556		
12/11/2025	633.1111111		
12/12/2025	633.1111111		
12/13/2025	660		
12/14/2025	666.2666667		
12/15/2025	656.7555556		
12/16/2025	651.3777778		
12/17/2025	651.9111111		



**ATTACHMENT 3  
JUALIN PORTAL WATER FLOW**

Date	Total Jualin gpm	Jualin to UG/Comet (>18 hrs in shift)	Jualin to TTF (>18hrs in a shift)
12/18/2025	-489990.6		
12/19/2025	491260.7333		
12/20/2025	623.0222222		
12/21/2025	589.4666667		
12/22/2025	529.5555556		
12/23/2025	555.1111111		
12/24/2025	555.5875		
12/25/2025	564.6625		
12/26/2025	533.9888889		
12/27/2025	547.2333333		
12/28/2025	530.4958333		
12/29/2025	529.4708333		
12/30/2025	531.2722222		
12/31/2025	-551865.3333		