



Pump Station 9 Mainline Turbine Sump

2024 Product Recovery Report

Alyeska Pipeline Service Company

P.O. Box 196660
3700 Centerpoint Drive
Anchorage, Alaska 99519-6660

Prepared by:

SLR International Corporation

2700 Gambell Street, Suite 200, Anchorage, Alaska, 99503

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This document has been prepared by SLR International Corporation (SLR). The material and data in this report were prepared under the supervision and direction of the individuals below.

Prepared by: Caroline Jennings, QEP

Reviewed and Approved by: Robert Klieforth, QEP



Executive Summary

SLR International Corporation (SLR) conducted multiple separate-phase hydrocarbon recovery events at the Pump Station 9 Mainline Turbine Sump site in 2024 on behalf of Alyeska Pipeline Service Company. The purpose of the project is to remove free product from recovery wells that migrated into groundwater after a historical turbine fuel spill that was discovered in 1996.

Free product recovery was conducted six times from recovery wells MW-1 and MW-5 in 2024. At MW-1, the measured product thickness varied from 0.00 feet (ft) to 0.01 ft (trace) during all six recovery events. This is the first year that there was no measurable product recovered from MW-1 during any event. In contrast, the product thickness measured in MW-5 varied throughout the field season from 0.26 ft to 0.30 ft during all six recovery events. A total of 3.2 gal of product was recovered from MW-5.

It is estimated that a total of approximately 3.2 gal of free product was recovered in 2024 from only well MW-5. Approximately 1,266 gal of free product has been recovered from this site to date. This total accounts for about 63 percent of the estimated 2,000 gal of free product present at the site; however, only 181 gal of the total volume has been recovered since the shutdown of the active recovery system in 2009. In all years prior to 2019, entrained water in the recovered product mix biased the total product recovery measurements. The recovered product estimates from 2019 through 2024 were adjusted to account for the water fraction present in recovered fluid based on measurements of water and product recovered in sorbent socks in 2020.

SLR will continue to conduct annual product recovery activities in early summer (June) of 2025 and biennial groundwater monitoring in 2025 per the approved 2023-2025 *Groundwater Monitoring and Product Recovery Work Plan* (SLR, 2023a).



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Acronyms and Abbreviations

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
Alyeska	Alyeska Pipeline Service Company
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
DRO	diesel range organics
ft	foot/feet
gal	gallons
MLT	Mainline Turbine
MW	monitoring well
PAH	polynuclear aromatic hydrocarbon
PS09	Pump Station 9
SLR	SLR International Corporation



1.0 Introduction

SLR International Corporation (SLR) conducted recovery of separate-phase hydrocarbons (hereafter referred to as free product) at the Mainline Turbine (MLT) Sump site at Pump Station 9 (PS09) for Alyeska Pipeline Service Company (Alyeska) in 2024. The purpose of the project is to remove free product from two product recovery wells until product recovery no longer becomes feasible or effective and to monitor the impacts from the historical turbine fuel release. Recovery well product thicknesses were gauged, and product was recovered on six site visits. This report summarizes the project approach, methodology, and product recovery results.

1.1 Physical Setting

PS09 is located approximately 7 miles south of Delta Junction on the Richardson Highway in the Tanana-Kuskokwim lowlands region of interior Alaska (Figure 1). The pump station is situated in an area of relatively flat topography at an elevation of 1,500 feet (ft) above mean sea level. The pump station is built on a gravel pad and consists of several buildings, pipeline infrastructure, and a tank farm (Figure 2). Monitoring and free product recovery wells are situated around, and hydraulically downgradient, of the former MLT Sump (Figure 3).

Soil and sediments at PS09 consist of glacial outwash and Pleistocene surficial deposits of the Tanana River drainage. During subsurface investigations and monitoring well installations conducted in 1998, the underlying soil at PS09 was predominantly poorly sorted, well-rounded sand and gravel with cobbles and boulders consistent with glacial outwash deposits (EMCON, 1999). The soil type recorded on the PS09 drinking water well log indicates that the pump station is underlain by at least 420 ft of unconsolidated, coarse sediments consisting of sand, cobbles, and boulders also indicative of glacial outwash sediments. During the 1998 investigation, groundwater was encountered at approximately 110 ft below ground surface (bgs). This aquifer appeared to be discontinuous and only a few feet thick and terminated in a dry, dense stratum of gravel and cobbles (EMCON, 1999).

1.2 Project Background

Alyeska encountered petroleum-contaminated soil during the removal of the PS09 MLT Sump in October 1996 (Alyeska spill number 1996130). The site was excavated to the extent practical; however, diesel range organics (DRO)-contaminated soil remained in the subsurface at concentrations greater than the Alaska Department of Environmental Conservation (ADEC) soil cleanup level.

Environmental investigations have been ongoing at this site since 1997, when an Alyeska contractor advanced three soil borings to assess the extent of subsurface contamination underlying the former MLT Sump. The site activities from 1997 to 2016 are described in the 2017 Groundwater and Product Recovery Report (SLR, 2018), and relevant details are summarized below.

1.2.1 1997 and 1998 Soil Investigations

A subsurface investigation conducted in July 1997 confirmed the presence of contamination to at least 65 ft bgs near the MLT Sump. During drilling, cobbles and boulders prevented boring advancement beyond 65 ft bgs; an additional boring was advanced through the source area using an air rotary drill rig later in 1997 and was completed as monitoring well MW-1. While drilling monitoring well MW-1, petroleum hydrocarbon-impacted soil was noted to extend to a depth of 110 ft bgs, where groundwater was encountered. A thin layer of free product was



measured on the top of the groundwater table and was tentatively identified as weathered turbine fuel. Beginning in 1998, monitoring well MW-1 was used as a product recovery well (Figure 3; EMCON, 1998). Two additional monitoring wells, MW-2 and MW-3 were installed in 1997 to evaluate the direction of groundwater flow and the hydraulic gradient at the site. Monitoring well MW-2 was installed west of the MLT Sump and monitoring well MW-3 was installed approximately 200 ft southwest of the MLT Sump (Figure 3; EMCON, 1998).

In 1998, eight additional soil borings were advanced, seven of which were converted into monitoring wells (MW-4 through MW-10). Soil and groundwater samples were also collected as part of the 1998 investigation. Monitoring well MW-9 was decommissioned in 1998 and monitoring well MW-4 was destroyed in the winter of 2004-2005, leaving the current total of eight monitoring and recovery wells on site (EMCON, 1999). Product recovery began in 1998 and has continued to the present. Recovery well MW-6 was decommissioned in 2017 and is no longer used for product recovery (SLR, 2018).

1.2.2 Free Product Recovery

Free product recovery was initiated following the installation of MW-1 in 1997 and MW-5 and MW-6 in 1998, and recovery was performed each subsequent summer at all three product recovery wells until MW-6 was decommissioned in 2017. Product recovery events continued at the other two wells through 2023 and are included in the *2023 Product Recovery and Groundwater Monitoring Report (SLR, 2023b)*.

Overall, annual recovery from the product recovery system declined steadily until 2013, when the estimated recovery volume increased, likely due to using product-selective sorbent socks (hereafter referred to as sorbent socks) during site visits rather than the product recovery canisters. Recovery volumes then decreased until 2016, when they increased slightly from the previous year. The increased recovery may have occurred due to an increase in product recovery events. Recovery has shown an overall decrease since 2013, culminating in the 2020 recovery event, which saw the lowest recovered volume since 2012. The total volume of product recovered through 2020 was approximately 1,241 gallons (gal).

In 2020, SLR recovered fluid from 2-inch and 4-inch sorbents using a wringer and quantified recovered fuel and water using a graduated cylinder and electronic scale. Reduced product capacity in the sorbents was due to water entrained in the hydrophobic sorbent material. Based on the water and product recovery measurements, correction factors of 0.36 and 0.60 were established for 2-inch and 4-inch sorbent socks, respectively. Using these correction factors, volume recovery estimates for 2019 through 2023 were revised to reflect product-only volumes recovered using sorbent socks. Product volume recovery estimates could not be updated for years up to and including 2018 because product bailers were used in addition to sorbents. Using revised product recovery volumes from 2019 to 2023, 2023 represented the lowest recorded volume at the site.

1.3 Groundwater Monitoring

Groundwater sampling at the site has been conducted at various frequencies (quarterly to biennial) since the initial sampling event in 1997. Analytical results show that for the wells sampled, concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX) and DRO have remained below ADEC groundwater cleanup levels in the monitoring wells since 2001, except for samples collected from monitoring wells MW-2 and MW-7. Exceedances were reported for DRO in monitoring well MW-2 in 2010 and for benzene in monitoring well MW-7 from 2004 to 2011 (SLR, 2014).



Only a single polynuclear aromatic hydrocarbon (PAH), naphthalene, has been detected at the site, at a concentration approaching ADEC cleanup levels (EMCON, 1998). Following the 2003 sampling event, analysis for PAHs was discontinued, except for naphthalene. Samples continued to be analyzed for naphthalene through 2009. With no detections of naphthalene since 2006, analysis was discontinued after 2009 with ADEC approval (SLR, 2010).

Groundwater monitoring results for the five wells sampled in 2015 and 2016 found that analyte concentrations were below their respective laboratory detection limits at all wells, except for well MW-7, where DRO and benzene concentrations were detected well below ADEC cleanup levels and 2014 concentrations. Detected analyte concentrations at monitoring well MW-7 generally declined from 2011 to 2016 (SLR, 2016).

Groundwater monitoring has been conducted biennially since 2017. In 2019, for the first time at the site, BTEX was not detected above the laboratory limit of detection. In 2021 and 2023, there was only one detection of BTEX congeners (benzene at MW-7) which was below the ADEC cleanup level. Since 2017, there have been sporadic detections of DRO at the site with one exceedance of the ADEC cleanup level (at MW-7 in 2023).

1.4 Objectives and Scope of Work

The project objective is to remove free product and to monitor the impacts from the historical turbine fuel release. The following scope of work was completed in 2024:

- Continued free product recovery from recovery wells MW-1 and MW-5 to reduce the spread of free product further into groundwater;
- Measure the depth to free product, depth to water, and calculate free product thickness before and after recovery to evaluate the effectiveness of product recovery efforts; and
- After product recovery activities, installation of heat trace in recovery wells MW-1 and MW-5 to facilitate well thawing and early resumption of product recovery in early June 2025.



2.0 Field Activities

This section describes product recovery activities conducted during the 2024 field season. Field activities were conducted in accordance with the *2023-2025 Groundwater Monitoring and Product Recovery Work Plan* (SLR, 2023a) and *ADEC Field Sampling Guidance* (ADEC, 2024). All field sampling was performed by a qualified environmental professional as defined by 18 AAC 75.333. Field activities were documented in the Photograph Log (Appendix A) and in the Field Logbook (Appendix B).

2.1 Product Gauging

Product recovery activities were performed between May 28 and September 10, 2024, and included the measurement of free product thicknesses and product recovery from wells MW-1 and MW-5. Recovery wells MW-1 and MW-5 were gauged for free product and depth to water using an oil/water interface probe. The apparent product thickness in recovery wells was calculated by subtracting the depth to product from the depth to water. The interface probe was decontaminated using a non-ionic detergent solution following gauging activities. Product recovery activities are documented in the project Field Logbook (Appendix B).

The thickness of free product present in a formation (true thickness) is less than the thickness of product observed floating on top of the water in a monitoring well (apparent thickness). Factors affecting the difference between the true thickness and the apparent thickness include the density of the free product, the density of the groundwater, and the characteristics of the formation. All product thicknesses described in this report are presented in terms of apparent thickness, as measured in the product recovery wells.

2.2 Free Product Recovery

SLR visited the site on six separate occasions in 2024 to thaw, gauge, and/or conduct product recovery from recovery wells MW-1 and MW-5. Contrary to the past years, MW-5 did not have an ice plug present in the well during initial product recovery. MW-1 was thawed on May 28, and free product recovery for both monitoring wells was conducted beginning on May 28 and continued on each subsequent visit. Field measurements of depth to free product, depth to water, and free product thickness before and after recovery were recorded in the Field Logbook (Appendix B).

2.2.1 Well Thawing

Heat trace wires installed the previous fall are used to thaw ice in the upper casing of recovery wells MW-1 and MW-5. Thawing of ice in the MW-1 recovery well was necessary to facilitate early product measurement and product recovery. No ice was present at MW-5. This is a significant improvement over waiting for natural thawing, which occurred as late as August in previous years.

2.2.2 Recovery Methods

Product recovery was accomplished using sorbent socks. The sorbent socks used were DGS1 Geo Slope Indicator SoakEase™ 2-inch and 4-inch nominal diameter absorbent socks. The sorbent socks used typically reduce product thickness to less than 0.10 ft after one to six deployments.



Passive recovery using sorbent socks deployed between visits was eliminated in 2018 to improve the accuracy of the initial gauging of product thickness before product recovery during each site visit.

2.2.3 Product Volume Measurement

The volume of free product recovered using the sorbent socks was estimated using the percentage of the sock visually wetted with product, the vendor's published product absorbing capacity for the sorbent sock used, and the assumption that only free product was absorbed. Typically, however, a water and turbine fuel mix has been observed in the oily waste bags containing the spent 4-inch absorbent socks, suggesting that the larger-diameter socks entrain water along with oil within their fibrous filling. Therefore, the calculated volume of free product recovered with sorbent socks has been considered biased high, but that bias was not quantified until 2020. As discussed in the *Pump Station 9 Mainline Turbine Sump 2020 Product Recovery Report* (SLR, 2020), SLR established product recovery correction factors in 2020 for 2-inch and 4-inch sorbent socks and applied those factors to recovery volumes in 2019 and 2020. These same correction factors were used again in 2024.

2.2.4 Heat Trace Employment

SLR placed heat trace in the two recovery wells after the product recovery event on September 10, 2024. The heat trace was first installed following the product recovery event in October 2013 to enable thawing of the shallow ice plugs that typically form between 8 ft and 14 ft bgs in the zone of seasonal frost. The heat traces extend to approximately 20 ft bgs in each well and are powered by a portable gasoline-powered generator placed in a rubber drip containment mat.

2.3 Work Plan Deviations

No Work Plan deviations were noted for the product recovery activities conducted in 2024.

2.4 Waste Management

Solid and liquid wastes generated during field activities were managed as follows:

- Used sorbent socks were placed in double-bagged oily-waste bags and left in the appropriate oily-waste receptacle at PS09 for offsite disposal.

Prior to each field event, the disposal of waste materials was discussed with the PS09 Waste Single Point of Contact and/or Operations and Maintenance Supervisor.



3.0 Product Recovery Results

This section describes the results of field activities completed in 2024, which included measurement of free product thickness and recovery of free product. Measurements of product thickness at recovery wells are presented in Table 1. The maximum gauged free product thicknesses from 1998 through 2010 and recovery volumes and product thicknesses from 2011 through 2024 for wells MW-1 and MW-5 are presented in Tables 2 and 3, respectively.

3.1 Apparent Free Product Thickness

Initial product thickness in MW-1 was less than measured in 2023 and in previous years. Initial product thickness in MW-5 was higher than in 2023 and was followed by variable thicknesses throughout the summer. Product thicknesses measured on the final recovery event showed a decrease in thickness from post-thaw thicknesses due to product recovery efforts at MW-1. At MW-5, the product thickness of 0.30 inches measured on the final product recovery event exceeded the product thickness of 0.26 inches measured on the initial product recovery event.

Historical product gauging results for MW-1 and MW-5 are shown on Tables 2 and 3, respectively, and are summarized as follows:

- **MW-1:** The apparent pre-recovery product thickness of 0.01 ft in 2024 was less than the 0.50 ft measured in 2023. Additionally, the final product thickness of 0.00 ft achieved after six recovery events was a historical low for MW-1. The final product thickness was also lower than the true product thickness of 0.27 to 0.30 ft determined from the 2015 baildown test.
- **MW-5:** The pre-recovery product thickness of 0.26 ft was more than the 0.08 ft pre-recovery thickness measured in 2023. The final product thickness of 0.30 ft achieved after six recovery events was greater than the final measurement of 0.17 ft in 2023. Additionally, the final product thickness of 0.30 ft was comparable to the true thickness of 0.21 to 0.31 ft determined from the 2015 baildown test.

Variations in product thickness between years may result from continued product recovery and seasonal changes in groundwater elevations. Overall, the apparent free product thicknesses have decreased since the gauging of recovery wells began in 1997.

3.2 Free Product Recovery

The total volume of product recovered during six visits conducted in 2024 decreased to zero for MW-1 and increased for MW-5 as compared to recovery totals from 2023. The results of annual product recovery events completed for wells MW-1 and MW-5 are presented in Tables 2 and 3, respectively, and a comparison of annual product recovery periods is provided in Table 4. Results of 2024 product recovery activities are summarized as follows:

- **MW-1:** The total free product recovered using sorbent socks was approximately 0.0 gal. There was little (0.01 ft) to no measurable product detected in the well during each of the six site visits and no measurable product recovered in any of the sorbent socks.
- **MW-5:** The total free product recovered using sorbent socks was approximately 3.2 gal, a small increase from the 2.7 gal recovered in 2023. The measured recovery volume represents 2 percent of the 138.2 gal of product recovered from this well since 2011.

The year-end total product recovery volumes for wells MW-1 and MW-5 are variable and do not correlate directly to the number of recovery events, indicating that the effectiveness of recovery



events varies from year to year and may also not correlate to pre-recovery product thicknesses. The total volume of recovered product to date of approximately 1,266 gal represents a substantial portion (63 percent) of the approximately 2,000 gal thought to have been released. The product recovered in 2024 represents only 0.2 percent of the estimated total of 1,266 gal of free product recovered from all wells since discovering the contamination in 1996 (Table 4). Additionally, the 181 gal of product recovered between 2011 and 2024 represents only a small fraction (14 percent) of the total volume recovered since 1996.



4.0 Conclusions and Recommendations

Product gauging and product removal from the recovery wells in 2024 was successful in contributing to the objective of reducing the amount of free product present in the groundwater at MW-5 where product was present but not at MW-1 where product levels have decreased to trace or unmeasurable thicknesses. Activities completed in 2024 at the PS09 MLT Sump site included thawing of MW-1, product recovery at MW-1 and MW-5, and reinstallation of heat trace in the product recovery wells for the 2025 product recovery season.

At MW-1, there was little (0.01 ft) to no measurable product detected in the well during each of the six site visits. These are the lowest product thicknesses ever recorded at MW-1. Furthermore, no measurable product was recovered from well MW-1 for the first time.

At MW-5, initial product thicknesses were consistent with thicknesses recorded in previous years. Product thickness in MW-5 varied during the summer but showed a slight increase by the end of the field season. The total volume of product recovered from well MW-5 increased by 0.4 gal compared to 2023.

SLR will continue to conduct annual product recovery activities in early summer (June) of 2025 and biennial groundwater monitoring in 2025 per the approved 2023-2025 *Groundwater Monitoring and Product Recovery Work Plan* (SLR, 2023a).



5.0 References

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Limitations

The services described in this work product were performed in accordance with generally accepted professional consulting principles and practices. No other representations or warranties, expressed or implied, are made. These services were performed consistent with our agreement with our client. This work product is intended solely for the use and information of our client unless otherwise noted. Any reliance on this work product by a third party is at such party's sole risk.

Opinions and recommendations contained in this work product are based on conditions that existed at the time the services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. The data reported and the findings, observations, and conclusions expressed are limited by the scope of work. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this work product.

The purpose of an environmental assessment is to reasonably evaluate the potential for, or actual impact of, past practices on a given site area. In performing an environmental assessment, it is understood that a balance must be struck between a reasonable inquiry into the environmental issues and an appropriate level of analysis for each conceivable issue of potential concern. The following paragraphs discuss the assumptions and parameters under which such an opinion is rendered.

No investigation can be thorough enough to exclude the presence of hazardous materials at a given site. If hazardous conditions have not been identified during the assessment, such a finding should not therefore be construed as a guarantee of the absence of such materials on the site, but rather as the result of the services performed within the scope, practical limitations, and cost of the work performed.

Environmental conditions that are not apparent may exist at the site. Our professional opinions are based in part on interpretation of data from a limited number of discrete sampling locations and therefore may not be representative of the actual overall site environmental conditions.

The passage of time, manifestation of latent conditions, or occurrence of future events may require further study at the site, analysis of the data, and/or reevaluation of the findings, observations, and conclusions in the work product.

This work product presents professional opinions and findings of a scientific and technical nature. The work product shall not be construed to offer legal opinion or representations as to the requirements of, nor the compliance with, environmental laws rules, regulations, or policies of federal, state or local governmental agencies.



Tables

Pump Station 9 Mainline Turbine Sump

2024 Product Recovery Report

Alyeska Pipeline Service Company

ADEC File No: 330.38.065

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**Table 1 - Groundwater and Free Product Elevations
PS09 Mainline Turbine Sump**

Well Name	Date	Well Elevation (feet above MSL) ^A	Depth to Groundwater (feet)	Groundwater Elevation ^B (feet above MSL)	Depth to Free Product (feet)	Free Product Elevation (feet above MSL)	Apparent Free Product Thickness (feet)
MW-1	11/7/1997	1504.98	114.77	1390.21	NM	NM	NM
	4/1/1998	1504.98	114.61	1390.37	NM	NM	NM
	11/22/1998	1504.98	114.73	1390.25	114.54	1390.44	0.19
	12/1/1998	1504.98	114.78	1390.20	114.59	1390.39	0.19
	6/8/1999	1504.98	116.03	1388.95	115.13	1389.85	0.90
	9/16/1999	1504.98	115.93	1389.05	115.58	1389.40	0.35
	10/7/1999	1504.98	116.71	1388.27	115.48	1389.50	1.23
	11/11/1999	1504.98	116.66	1388.32	115.51	1389.47	1.15
	5/17/2000	1504.98	115.52	1389.46	114.52	1390.46	1.00
	12/28/2000	1504.98	112.00	1392.98	104.80	1400.18	7.20
	7/19/2001	1501.23	106.40	1394.83	101.92	1399.31	4.48
	9/19/2001	1501.23	104.25	1396.98	103.65	1397.58	0.60
	6/10/2002	1501.23	108.90	1392.33	108.56	1392.67	0.34
	10/2/2002	1501.23	109.58	1391.65	109.37	1391.86	0.21
	6/3/2003	1501.23	111.07	1390.16	110.12	1391.11	0.95
	6/23/2003	1501.23	110.52	1390.71	110.20	1391.03	0.32
	7/24/2003	1501.23	110.88	1390.35	110.41	1390.82	0.47
	8/28/2003	1501.23	111.36	1389.87	110.71	1390.52	0.65
	9/15/2003	1501.23	111.56	1389.67	110.89	1390.34	0.67
	10/3/2003	1501.23	111.37	1389.86	110.72	1390.51	0.65
	6/2/2004	1501.23	111.89	1389.34	110.99	1390.24	0.90
	6/3/2004	1501.23	111.44	1389.79	111.15	1390.08	0.29
	6/10/2004	1501.23	110.90	1390.33	110.81	1390.42	0.09
	7/8/2004	1501.23	110.46	1390.77	110.44	1390.79	0.02
	7/20/2004	1501.23	110.22	1391.01	110.22	1391.01	0.00
	8/12/2004	1501.23	110.14	1391.09	110.08	1391.15	0.06
	9/2/2004	1501.23	109.83	1391.40	109.82	1391.41	0.01
	10/19/2004	1501.23	109.88	1391.35	109.84	1391.39	0.04
	6/20/2005	1501.23	110.74	1390.49	110.74	1390.49	0.00
	6/28/2005	1501.23	109.52	1391.71	109.52	1391.71	0.00
	10/17/2005	1501.23	109.19	1392.04	109.19	1392.04	0.00
	11/3/2005	1501.23	109.18	1392.05	109.15	1392.08	0.03
	5/31/2006	1501.23	111.41	1389.82	110.70	1390.53	0.71
	7/13/2006	1501.23	111.02	1390.21	110.79	1390.44	0.23
	10/5/2006	1501.23	108.54	1392.69	108.02	1393.21	0.52
	5/30/2007	1501.23	109.54	1391.69	108.78	1392.45	0.76
	7/18/2007	1501.23	109.74	1391.49	109.32	1391.91	0.42
	8/3/2007	1501.23	110.05	1391.18	109.57	1391.66	0.48
	8/17/2007	1501.23	109.51	1391.72	N/A	N/A	0.00
	9/13/2007	1501.23	109.69	1391.54	109.685	1391.55	0.005
	9/21/2007	1501.23	109.67	1391.56	N/A	N/A	0.00
	10/5/2007	1501.23	109.29	1391.94	N/A	N/A	0.00
	10/12/2007	1501.23	109.33	1391.90	N/A	N/A	0.00
	11/2/2007	1501.23	109.25	1391.98	N/A	N/A	0.00
	6/2/2008	1501.23	110.22	1391.01	109.80	1391.43	0.42
	7/1/2008	1501.23	110.35	1390.88	N/A	N/A	0.00
	7/18/2008	1501.23	110.43	1390.80	110.38	1390.85	0.05
7/23/2008	1501.23	110.59	1390.64	110.50	1390.73	0.09	
7/25/2008	1501.23	110.60	1390.63	110.54	1390.69	0.06	
8/12/2008	1501.23	110.41	1390.82	110.40	1390.83	0.01	
9/3/2008	1501.23	109.70	1391.53	N/A	N/A	0.00	
9/12/2008	1501.23	109.33	1391.90	109.19	1392.04	0.14	
10/8/2008	1501.23	107.67	1393.56	106.68	1394.55	0.99	
7/17/2009	1501.23	108.36	1392.87	104.48	1396.75	3.88	
8/7/2010	1501.23	110.27	1390.96	109.95	1391.28	0.32	
9/25/2010	1501.23	108.28	1392.95	107.63	1393.60	0.65	
10/8/2010	1501.23	108.25	1392.98	107.43	1393.80	0.82	
10/12/2010	1501.23	107.88	1393.35	107.28	1393.95	0.60	
6/24/2011	1501.23	108.94	1392.29	107.94	1393.29	1.00	
7/18/2011	1501.23	109.02	1392.21	108.34	1392.89	0.68	
7/26/2011	1501.23	108.64	1392.59	108.45	1392.78	0.19	
8/8/2011	1501.23	108.75	1392.48	108.69	1392.54	0.06	
8/22/2011	1501.23	108.54	1392.69	108.53	1392.70	0.01	
9/9/2011	1501.23	108.86	1392.37	108.84	1392.39	0.02	
9/19/2011	1501.23	108.61	1392.62	108.6	1392.63	0.01	
10/6/2011	1501.23	108.52	1392.71	108.51	1392.72	0.01	
10/26/2011	1501.23	108.57	1392.66	108.56	1392.67	0.01	

**Table 1 - Groundwater and Free Product Elevations
PS09 Mainline Turbine Sump**

Well Name	Date	Well Elevation (feet above MSL) ^A	Depth to Groundwater (feet)	Groundwater Elevation ^B (feet above MSL)	Depth to Free Product (feet)	Free Product Elevation (feet above MSL)	Apparent Free Product Thickness (feet)
MW-1 Continued	6/5/2012	1501.23	NM	NM	NM	NM	NM
	6/20/2012	1501.23	NM	NM	NM	NM	NM
	7/5/2012	1501.23	NM	NM	NM	NM	NM
	7/20/2012	1501.23	NM	NM	NM	NM	NM
	8/3/2012	1501.23	NM	NM	NM	NM	NM
	8/9/2012	1501.23	110.06	1391.17	109.70	1391.53	0.36
	8/23/2012	1501.23	109.78	1391.45	109.58	1391.65	0.20
	9/6/2012	1501.23	109.90	1391.33	109.75	1391.48	0.15
	9/21/2012	1501.23	109.83	1391.40	109.69	1391.54	0.14
	10/8/2012	1501.23	109.88	1391.35	109.75	1391.48	0.13
	10/22/2012	1501.23	109.89	1391.34	109.78	1391.45	0.11
	6/19/2013	1501.23	NM	NM	NM	NM	NM
	6/27/2013	1501.23	NM	NM	NM	NM	NM
	7/19/2013	1501.23	NM	NM	NM	NM	NM
	8/2/2013	1501.23	NM	NM	NM	NM	NM
	8/14/2013	1501.23	NM	NM	NM	NM	NM
	8/29/2013	1501.23	112.62	1388.61	111.41	1389.82	1.21
	9/12/2013	1501.23	112.39	1388.84	111.60	1389.63	0.79
	10/4/2013	1501.23	112.43	1388.80	111.69	1389.54	0.74
	10/17/2013	1501.23	112.01	1389.22	111.68	1389.55	0.33
	6/3/2014	1501.23	114.28	1386.95	112.57	1388.66	1.71
	7/9/2014	1501.23	114.67	1386.56	112.61	1388.62	2.06
	7/28/2014	1501.23	113.63	1387.60	112.85	1388.38	0.78
	8/7/2014	1501.23	113.35	1387.88	112.74	1388.49	0.61
	8/26/2014	1501.23	113.48	1387.75	112.53	1388.70	0.95
	9/23/2014	1501.23	112.97	1388.26	112.29	1388.94	0.68
	10/9/2014	1501.23	112.43	1388.80	112.00	1389.23	0.43
	7/3/2015	1501.23	111.60	1389.63	111.11	1390.12	0.49
	7/14/2015	1501.23	112.06	1389.17	111.48	1389.75	0.58
	7/21/2015	1501.23	112.00	1389.23	111.51	1389.72	0.49
	8/12/2015	1501.23	112.14	1389.09	111.72	1389.51	0.42
	8/25/2015	1501.23	112.11	1389.12	111.82	1389.41	0.29
	9/13/2015	1501.23	112.09	1389.14	111.86	1389.37	0.23
	10/1/2015	1501.23	112.28	1388.95	112.08	1389.15	0.20
	6/1/2016	1501.23	NM	NM	NM	NM	NM
	6/2/2016	1501.23	112.23	1389.00	111.64	1389.59	0.59
	6/7/2016	1501.23	112.54	1388.69	111.78	1389.45	0.76
	6/11/2016	1501.23	112.27	1388.96	111.78	1389.45	0.49
	6/27/2016	1501.23	112.25	1388.98	111.93	1389.30	0.32
	7/10/2016	1501.23	112.24	1388.99	112.03	1389.20	0.21
	8/5/2016	1501.23	112.26	1388.97	112.19	1389.04	0.07
	8/18/2016	1501.23	112.34	1388.89	112.24	1388.99	0.10
	9/5/2016	1501.23	112.29	1388.94	112.18	1389.05	0.11
	9/16/2016	1501.23	112.33	1388.90	112.22	1389.01	0.11
	10/3/2016	1501.23	112.59	1388.64	112.33	1388.90	0.26
10/13/2016	1501.23	112.42	1388.81	112.25	1388.98	0.17	
5/25/2017	1501.23	NM	NM	NM	NM	NM	
5/26/2017	1501.23	114.03	1387.20	112.78	1388.45	1.25	
6/7/2017	1501.23	114.17	1387.06	112.76	1388.47	1.41	
6/27/2017	1501.23	113.33	1387.90	112.99	1388.24	0.34	
7/24/2017	1501.23	113.43	1387.80	113.14	1388.09	0.29	
9/14/2017	1501.23	113.61	1387.62	113.20	1388.03	0.41	
9/28/2017	1501.23	113.45	1387.78	113.16	1388.07	0.29	
10/19/2017	1501.23	113.35	1387.88	113.16	1388.07	0.19	
6/4/2018	1501.23	114.97	1386.26	113.31	1387.92	1.66	
6/8/2018	1501.23	113.84	1387.39	113.55	1387.68	0.29	
6/25/2018	1501.23	NM	NM	NM	NM	NM	
7/19/2018	1501.23	113.77	1387.46	113.52	1387.71	0.25	
8/2/2018	1501.23	113.59	1387.64	113.31	1387.92	0.28	
8/16/2018	1501.23	113.71	1387.52	113.21	1388.02	0.50	
9/4/2018	1501.23	113.90	1387.33	113.22	1388.01	0.68	
9/18/2018	1501.23	113.31	1387.92	113.10	1388.13	0.21	
10/1/2018	1501.23	113.14	1388.09	112.82	1388.41	0.32	
5/24/2019	1501.23	110.8	1390.43	110.55	1390.68	0.25	
5/31/2019	1501.23	110.68	1390.55	110.45	1390.78	0.23	
6/14/2019	1501.23	110.67	1390.56	110.55	1390.68	0.12	
6/28/2019	1501.23	110.94	1390.29	110.77	1390.46	0.17	

**Table 1 - Groundwater and Free Product Elevations
PS09 Mainline Turbine Sump**

Well Name	Date	Well Elevation (feet above MSL) ^A	Depth to Groundwater (feet)	Groundwater Elevation ^B (feet above MSL)	Depth to Free Product (feet)	Free Product Elevation (feet above MSL)	Apparent Free Product Thickness (feet)
MW-1 Continued	7/12/2019	1501.23	110.95	1390.28	110.79	1390.44	0.16
	7/31/2019	1501.23	111.1	1390.13	110.94	1390.29	0.16
	8/9/2019	1501.23	111.2	1390.03	111.04	1390.19	0.16
	8/30/2019	1501.23	111.35	1389.88	111.19	1390.04	0.16
	9/13/2019	1501.23	111.1	1390.13	110.98	1390.25	0.12
	9/27/2019	1501.23	111.5	1389.73	111.30	1389.93	0.20
	10/14/2019	1501.23	111	1390.23	110.93	1390.30	0.07
	10/30/2019	1501.23	110.81	1390.42	110.77	1390.46	0.04
	7/1/2020	1501.23	NM	NM	NM	NM	NM
	7/29/2020	1501.23	105.52	1395.71	104.91	1396.32	0.61
	8/11/2020	1501.23	104.88	1396.35	104.58	1396.65	0.30
	8/24/2020	1501.23	104.28	1396.95	104.04	1397.19	0.24
	9/15/2020	1501.23	103.8	1397.43	103.55	1397.68	0.25
	9/29/2020	1501.23	104.2	1397.03	103.91	1397.32	0.29
	10/14/2020	1501.23	103.97	1397.26	103.68	1397.55	0.29
	11/11/2020	1501.23	103.15	1398.08	103.00	1398.23	0.15
	6/15/2021	1501.23	105.55	1395.68	104.58	1396.65	0.97
	7/9/2021	1501.23	105.2	1396.03	104.97	1396.26	0.23
	7/21/2021	1501.23	105.17	1396.06	105.06	1396.17	0.11
	8/12/2021	1501.23	105.56	1395.67	105.43	1395.80	0.13
	8/26/2021	1501.23	105.8	1395.43	105.65	1395.58	0.15
	10/1/2021	1501.23	106.06	1395.17	105.89	1395.34	0.17
	5/19/2022	1501.23	NM	NM	NM	NM	NM
	6/7/2022	1501.23	108.39	1392.84	108.18	1393.05	0.21
	7/8/2022	1501.23	107.11	1394.12	106.96	1394.27	0.15
	7/26/2022	1501.23	107.02	1394.21	106.92	1394.31	0.10
	8/16/2022	1501.23	106.38	1394.85	106.28	1394.95	0.10
	8/25/2022	1501.23	106.45	1394.78	106.31	1394.92	0.14
	9/8/2022	1501.23	106.15	1395.08	106.10	1395.13	0.05
	9/20/2022	1501.23	106.50	1394.73	106.37	1394.86	0.13
	10/17/2022	1501.23	106.25	1394.98	106.16	1395.07	0.09
	5/23/2023	1501.23	109.03	1392.20	108.53	1392.70	0.50
	6/1/2023	1501.23	108.66	1392.57	108.53	1392.70	0.13
	6/22/2023	1501.23	108.38	1392.85	108.32	1392.91	0.06
7/11/2023	1501.23	108.29	1392.94	108.24	1392.99	0.05	
8/4/2023	1501.23	108.12	1393.11	108.06	1393.17	0.06	
8/29/2023	1501.23	107.90	1393.33	107.89	1393.34	0.01	
9/23/2023	1501.23	108.16	1393.07	108.11	1393.12	0.05	
5/28/2024	1501.23	109.80	1391.43	109.79	1391.44	0.01	
6/14/2024	1501.23	109.97	1391.26	109.96	1391.27	0.01	
6/27/2024	1501.23	109.85	1391.38	109.84	1391.39	0.01	
7/11/2024	1501.23	109.98	1391.25	109.98	1391.25	0.00	
8/7/2024	1501.23	110.00	1391.23	110.00	1391.23	0.00	
9/10/2024	1501.23	110.20	1391.03	110.20	1391.03	0.00	
MW-2	11/7/1997	1504.59	NM	NM	N/A	N/A	N/A
	4/1/1998	1504.59	114.76	1389.83	N/A	N/A	0.00
	11/22/1998	1504.59	113.90	1390.69	N/A	N/A	0.00
	12/1/1998	1504.59	114.32	1390.27	N/A	N/A	0.00
	6/9/1999	1504.59	115.40	1389.19	N/A	N/A	0.00
	9/17/1999	1504.59	113.28	1391.31	N/A	N/A	0.00
	11/11/1999	1504.59	114.00	1390.59	N/A	N/A	0.00
	5/17/2000	1504.59	115.31	1389.28	N/A	N/A	0.00
	7/14/2000	1504.59	115.09	1389.50	N/A	N/A	0.00
	10/13/2000	1504.59	112.16	1392.43	N/A	N/A	0.00
	3/27/2001	1504.58	105.95	1398.63	N/A	N/A	0.00
	7/12/2001	1504.58	105.49	1399.09	N/A	N/A	0.00
	9/20/2001	1504.58	106.49	1398.09	N/A	N/A	0.00
	11/16/2001	1504.58	107.48	1397.10	N/A	N/A	0.00
	6/11/2002	1504.58	111.70	1392.88	N/A	N/A	0.00
	10/4/2002	1504.58	112.26	1392.32	N/A	N/A	0.00
	6/24/2003	1504.58	115.46	1389.12	N/A	N/A	0.00
	10/1/2003	1504.58	114.38	1390.20	N/A	N/A	0.00
	6/10/2004	1504.58	115.78	1388.80	N/A	N/A	0.00
10/18/2004	1504.58	114.87	1389.71	N/A	N/A	0.00	
6/27/2005	1504.58	113.44	1391.14	N/A	N/A	0.00	
10/16/2005	1504.58	113.98	1390.60	N/A	N/A	0.00	
6/1/2006	1504.58	113.36	1391.22	N/A	N/A	0.00	

**Table 1 - Groundwater and Free Product Elevations
PS09 Mainline Turbine Sump**

Well Name	Date	Well Elevation (feet above MSL) ^A	Depth to Groundwater (feet)	Groundwater Elevation ^B (feet above MSL)	Depth to Free Product (feet)	Free Product Elevation (feet above MSL)	Apparent Free Product Thickness (feet)
MW-2 Continued	10/5/2006	1504.58	103.40	1401.18	N/A	N/A	0.00
	7/17/2006	1504.58	114.44	1390.14	N/A	N/A	0.00
	10/4/2007	1504.58	112.82	1391.76	N/A	N/A	0.00
	7/25/2008	1504.58	116.78	1387.80	N/A	N/A	0.00
	7/18/2009	1504.58	107.60	1396.98	N/A	N/A	0.00
	8/11/2010	1504.58	111.89	1392.69	N/A	N/A	0.00
	9/8/2011	1504.58	113.22	1391.36	N/A	N/A	0.00
	7/20/2012	1504.58	113.56	1391.02	N/A	N/A	0.00
	8/22/2013	1504.58	116.18	1388.40	N/A	N/A	0.00
	9/19/2013	1504.58	116.30	1388.28	N/A	N/A	0.00
	6/5/2014	1504.58	116.79	1387.79	N/A	N/A	0.00
	7/15/2015	1504.58	116.51	1388.07	N/A	N/A	0.00
	6/6/2016	1504.58	116.68	1387.90	N/A	N/A	0.00
	6/7/2017	1504.58	121.90	1382.68	N/A	N/A	0.00
	5/30/2019	1504.58	116.15	1388.43	N/A	N/A	0.00
6/1/2021	1504.58	107.24	1397.34	N/A	N/A	0.00	
5/22/2023	1504.58	112.75	1391.83	N/A	N/A	0.00	
MW-3	11/7/1997	1508.38	117.94	1390.44	N/A	N/A	0.00
	4/1/1998	1508.38	117.83	1390.55	N/A	N/A	0.00
	11/21/1998	1508.38	117.89	1390.49	N/A	N/A	0.00
	12/1/1998	1508.38	118.04	1390.34	N/A	N/A	0.00
	6/9/1999	1508.38	116.49	1391.89	N/A	N/A	0.00
	9/16/1999	1508.38	116.88	1391.50	N/A	N/A	0.00
	11/11/1999	1508.38	116.93	1391.45	N/A	N/A	0.00
	5/16/2000	1508.38	115.90	1392.48	N/A	N/A	0.00
	7/16/2000	1508.38	115.54	1392.84	N/A	N/A	0.00
	10/11/2000	1508.38	113.85	1394.53	N/A	N/A	0.00
	3/27/2001	1506.36	106.30	1400.06	N/A	N/A	0.00
	7/11/2001	1506.36	107.87	1398.49	N/A	N/A	0.00
	9/20/2001	1506.36	108.94	1397.42	N/A	N/A	0.00
	11/16/2001	1506.36	110.21	1396.15	N/A	N/A	0.00
	6/10/2002	1506.36	113.63	1392.73	N/A	N/A	0.00
	10/3/2002	1506.36	114.19	1392.17	N/A	N/A	0.00
	6/24/2003	1506.36	115.07	1391.29	N/A	N/A	0.00
	10/2/2003	1506.36	115.73	1390.63	N/A	N/A	0.00
	6/11/2004	1506.36	115.61	1390.75	N/A	N/A	0.00
	10/19/2004	1506.36	114.64	1391.72	N/A	N/A	0.00
	6/28/2005	1506.36	114.32	1392.04	N/A	N/A	0.00
	10/17/2005	1506.36	114.04	1392.32	N/A	N/A	0.00
	6/1/2006	1506.36	115.73	1390.63	N/A	N/A	0.00
	10/5/2006	1506.36	112.82	1393.54	N/A	N/A	0.00
	7/18/2007	1506.36	114.23	1392.13	N/A	N/A	0.00
	10/4/2007	1506.36	114.42	1391.94	N/A	N/A	0.00
	7/24/2008	1506.36	115.54	1390.82	N/A	N/A	0.00
	7/18/2009	1506.36	110.21	1396.15	N/A	N/A	0.00
	8/12/2010	1506.36	114.87	1391.49	N/A	N/A	0.00
	9/8/2011	1506.36	114.04	1392.32	N/A	N/A	0.00
7/20/2012	1506.36	114.59	1391.77	N/A	N/A	0.00	
8/22/2013	1506.36	116.51	1389.85	N/A	N/A	0.00	
9/19/2013	1506.36	116.63	1389.73	N/A	N/A	0.00	
6/3/2014	1506.36	117.82	1388.54	N/A	N/A	0.00	
7/15/2015	1506.36	112.89	1393.47	N/A	N/A	0.00	
6/7/2016	1506.36	113.16	1393.20	N/A	N/A	0.00	
6/7/2017	1506.36	114.54	1391.82	N/A	N/A	0.00	
5/30/2019	1506.36	111.8	1394.56	N/A	N/A	0.00	
6/1/2021	1506.36	105.95	1400.41	N/A	N/A	0.00	
5/22/2023	1506.36	109.92	1396.44	N/A	N/A	0.00	
MW-4	11/21/1998	1497.70	109.38	1388.32	N/A	N/A	0.00
	12/1/1998	1497.70	109.52	1388.18	N/A	N/A	0.00
	6/9/1999	1497.70	110.68	1387.02	N/A	N/A	0.00
	9/16/1999	1497.70	111.24	1386.46	N/A	N/A	0.00
	11/11/1999	1497.70	111.42	1386.28	N/A	N/A	0.00
	5/16/2000	1497.70	111.66	1386.04	N/A	N/A	0.00
	7/14/2000	1497.70	111.59	1386.11	N/A	N/A	0.00
	10/13/2000	1497.70	110.10	1387.60	N/A	N/A	0.00
	3/27/2001	1497.69	107.30	1390.39	N/A	N/A	0.00
7/12/2001	1497.69	106.58	1391.11	N/A	N/A	0.00	

**Table 1 - Groundwater and Free Product Elevations
PS09 Mainline Turbine Sump**

Well Name	Date	Well Elevation (feet above MSL) ^A	Depth to Groundwater (feet)	Groundwater Elevation ^B (feet above MSL)	Depth to Free Product (feet)	Free Product Elevation (feet above MSL)	Apparent Free Product Thickness (feet)
MW-4 Continued	9/20/2001	1497.69	105.61	1392.08	N/A	N/A	0.00
	11/16/2001	1497.69	105.62	1392.07	N/A	N/A	0.00
	6/10/2002	1497.69	107.48	1390.21	N/A	N/A	0.00
	10/4/2002	1497.69	107.69	1390.00	N/A	N/A	0.00
	6/24/2003	1497.69	110.74	1386.95	N/A	N/A	0.00
	10/2/2003	1497.69	111.90	1385.79	N/A	N/A	0.00
	6/11/2004	1497.69	113.15	1384.54	N/A	N/A	0.00
	10/18/2004	1497.69	112.47	1385.22	N/A	N/A	0.00
	Well Destroyed in 2005			N/A	N/A	N/A	N/A
MW-5	11/21/1998	1501.22	111.31	1389.91	110.78	1390.44	0.53
	12/1/1998	1501.22	111.62	1389.60	110.83	1390.39	0.79
	9/16/1999	1501.22	113.56	1387.66	111.51	1389.71	2.05
	10/7/1999	1501.22	113.23	1387.99	111.44	1389.78	1.79
	11/11/1999	1501.22	113.52	1387.70	111.55	1389.67	1.97
	5/17/2000	1501.22	111.78	1389.44	111.69	1389.53	0.09
	7/16/2000	1501.22	111.37	1389.85	110.36	1390.86	1.01
	12/29/2000	1501.22	109.20	1392.02	100.90	1400.32	8.30
	7/19/2001	1501.22	109.30	1391.92	101.30	1399.92	8.00
	9/20/2001	1501.22	104.75	1396.47	103.47	1397.75	1.28
	6/10/2002	1501.22	109.60	1391.62	108.53	1392.69	1.07
	10/2/2002	1501.22	109.57	1391.65	109.29	1391.93	0.28
	6/3/2003	1501.22	110.85	1390.37	110.10	1391.12	0.75
	6/23/2003	1501.22	110.40	1390.82	110.14	1391.08	0.26
	7/24/2003	1501.22	110.48	1390.74	110.42	1390.80	0.06
	8/28/2003	1501.22	110.99	1390.23	110.72	1390.50	0.27
	9/15/2003	1501.22	111.12	1390.10	110.92	1390.30	0.20
	10/3/2003	1501.22	110.84	1390.38	110.78	1390.44	0.06
	6/2/2004	1501.22	111.72	1389.50	110.94	1390.28	0.78
	6/3/2004	1501.22	111.34	1389.88	111.09	1390.13	0.25
	6/10/2004	1501.22	110.89	1390.33	110.78	1390.44	0.11
	7/8/2004	1501.22	110.60	1390.62	110.36	1390.86	0.24
	7/20/2004	1501.22	110.26	1390.96	110.16	1391.06	0.10
	8/12/2004	1501.22	110.04	1391.18	110.00	1391.22	0.04
	9/2/2004	1501.22	109.79	1391.43	109.75	1391.47	0.04
	10/19/2004	1501.22	109.85	1391.37	109.76	1391.46	0.09
	6/20/2005	1501.22	111.65	1389.57	109.40	1391.82	2.25
	6/28/2005	1501.22	109.47	1391.75	109.47	1391.75	0.00
	10/17/2005	1501.22	109.12	1392.10	109.12	1392.10	0.00
	11/3/2005	1501.22	109.21	1392.01	109.15	1392.07	0.06
	5/31/2006	1501.22	111.15	1390.07	110.64	1390.58	0.51
	7/13/2006	1501.22	111.02	1390.20	110.70	1390.52	0.32
	10/5/2006	1501.22	108.35	1392.87	107.98	1393.24	0.37
	5/30/2007	1501.22	108.94	1392.28	108.72	1392.50	0.22
	7/18/2007	1501.22	109.52	1391.70	109.30	1391.92	0.22
	8/3/2007	1501.22	109.57	1391.65	109.56	1391.66	0.01
	8/17/2007	1501.22	109.61	1391.61	109.46	1391.76	0.15
	8/24/2007	1501.22	109.63	1391.59	109.51	1391.71	0.12
	9/13/2007	1501.22	109.70	1391.52	109.64	1391.58	0.06
	9/21/2007	1501.22	109.56	1391.66	109.53	1391.69	0.03
	10/5/2007	1501.22	109.25	1391.97	N/A	N/A	0.00
10/12/2007	1501.22	109.33	1391.89	109.30	1391.92	0.03	
11/2/2007	1501.22	109.20	1392.02	109.14	1392.08	0.06	
6/2/2008	1501.22	109.86	1391.36	109.77	1391.45	0.09	
7/1/2008	1501.22	110.49	1390.73	110.27	1390.95	0.22	
7/18/2008	1501.22	110.49	1390.73	110.31	1390.91	0.18	
7/23/2008	1501.22	110.63	1390.59	110.43	1390.79	0.20	
8/12/2008	1501.22	110.49	1390.73	110.37	1390.85	0.12	
9/3/2008	1501.22	109.63	1391.59	109.61	1391.61	0.02	
9/12/2008	1501.22	109.14	1392.08	109.12	1392.10	0.02	
10/8/2008	1501.22	106.58	1394.64	106.56	1394.66	0.02	
7/18/2009	1501.22	108.25	1392.97	104.42	1396.80	3.83	
8/6/2010	1501.22	110.17	1391.05	109.83	1391.39	0.34	
9/25/2010	1501.22	108.20	1393.02	107.57	1393.65	0.63	
10/8/2010	1501.22	108.20	1393.02	107.32	1393.90	0.88	
10/12/2010	1501.22	108.12	1393.10	107.12	1394.10	1.00	
6/24/2011	1501.22		NM	NM	NM	NM	NM
7/18/2011	1501.22		NM	NM	NM	NM	NM

**Table 1 - Groundwater and Free Product Elevations
PS09 Mainline Turbine Sump**

Well Name	Date	Well Elevation (feet above MSL) ^A	Depth to Groundwater (feet)	Groundwater Elevation ^B (feet above MSL)	Depth to Free Product (feet)	Free Product Elevation (feet above MSL)	Apparent Free Product Thickness (feet)
MW-5 Continued	7/26/2011	1501.22	NM	NM	NM	NM	NM
	8/8/2011	1501.22	108.80	1392.42	108.61	1392.61	0.19
	8/22/2011	1501.22	108.60	1392.62	108.42	1392.80	0.18
	9/9/2011	1501.22	108.86	1392.36	108.80	1392.42	0.06
	9/19/2011	1501.22	108.61	1392.61	108.54	1392.68	0.07
	10/6/2011	1501.22	108.46	1392.76	108.44	1392.78	0.02
	10/26/2011	1501.22	108.43	1392.79	108.40	1392.82	0.03
	6/5/2012	1501.22	110.05	1391.17	109.68	1391.54	0.37
	6/20/2012	1501.22	110.13	1391.09	109.77	1391.45	0.36
	7/5/2012	1501.22	110.04	1391.18	109.70	1391.52	0.34
	7/20/2012	1501.22	109.94	1391.28	109.67	1391.55	0.27
	8/3/2012	1501.22	110.03	1391.19	109.71	1391.51	0.32
	8/9/2012	1501.22	109.92	1391.30	109.68	1391.54	0.24
	8/23/2012	1501.22	109.71	1391.51	109.51	1391.71	0.20
	9/6/2012	1501.22	109.87	1391.35	109.67	1391.55	0.20
	9/21/2012	1501.22	109.79	1391.43	109.59	1391.63	0.20
	10/8/2012	1501.22	109.85	1391.37	109.66	1391.56	0.19
	10/22/2012	1501.22	109.85	1391.37	109.75	1391.47	0.10
	6/19/2013	1501.22	111.66	1389.56	111.00	1390.22	0.66
	6/27/2013	1501.22	112.07	1389.15	111.10	1390.12	0.97
	7/19/2013	1501.22	NM	NM	NM	NM	NM
	8/2/2013	1501.22	111.94	1389.28	111.22	1390.00	0.72
	8/14/2013	1501.22	112.38	1388.84	111.52	1389.70	0.86
	8/29/2013	1501.22	112.50	1388.72	111.62	1389.60	0.88
	9/12/2013	1501.22	112.48	1388.74	111.55	1389.67	0.93
	10/4/2013	1501.22	112.50	1388.72	111.61	1389.61	0.89
	10/17/2013	1501.22	112.40	1388.82	111.68	1389.54	0.72
	6/3/2014	1501.22	114.43	1386.79	112.48	1388.74	1.95
	7/9/2014	1501.22	114.67	1386.55	112.61	1388.61	2.06
	7/28/2014	1501.22	114.21	1387.01	112.64	1388.58	1.57
	8/7/2014	1501.22	113.87	1387.35	112.59	1388.63	1.28
	8/26/2014	1501.22	113.02	1388.20	112.52	1388.70	0.50
	9/23/2014	1501.22	112.54	1388.68	112.29	1388.93	0.25
	10/9/2014	1501.22	112.23	1388.99	111.94	1389.28	0.29
	6/4/2015	1501.22	NM	NM	NM	NM	NM
	7/3/2015	1501.22	NM	NM	NM	NM	NM
	7/14/2015	1501.22	112.44	1388.78	111.31	1389.91	1.13
	7/21/2015	1501.22	112.26	1388.96	111.38	1389.84	0.88
	8/12/2015	1501.22	112.82	1388.40	111.60	1389.62	1.22
	8/25/2015	1501.22	111.68	1389.54	111.57	1389.65	0.11
	9/13/2015	1501.22	112.98	1388.24	111.58	1389.64	1.40
	10/1/2015	1501.22	113.22	1388.00	111.79	1389.43	1.43
	6/1/2016	1501.22	112.20	1389.02	111.46	1389.76	0.74
	6/2/2016	1501.22	112.23	1388.99	111.64	1389.58	0.59
	6/7/2016	1501.22	113.06	1388.16	111.58	1389.64	1.48
6/11/2016	1501.22	112.85	1388.37	111.60	1389.62	1.25	
6/27/2016	1501.22	113.05	1388.17	111.81	1389.41	1.24	
7/10/2016	1501.22	113.00	1388.22	111.89	1389.33	1.11	
8/5/2016	1501.22	112.93	1388.29	111.97	1389.25	0.96	
8/18/2016	1501.22	113.09	1388.13	112.12	1389.10	0.97	
9/5/2016	1501.22	112.62	1388.60	112.10	1389.12	0.52	
9/16/2016	1501.22	112.49	1388.73	112.09	1389.13	0.40	
10/3/2016	1501.22	112.56	1388.66	112.25	1388.97	0.31	
10/13/2016	1501.22	112.38	1388.84	112.17	1389.05	0.21	
5/25/2017	1501.22	NM	NM	NM	NM	NM	
5/26/2017	1501.22	113.83	1387.39	112.72	1388.50	1.11	
6/7/2017	1501.22	114.03	1387.19	112.70	1388.52	1.33	
6/27/2017	1501.22	113.75	1387.47	112.84	1388.38	0.91	
7/24/2017	1501.22	113.86	1387.36	113.05	1388.17	0.81	
9/14/2017	1501.22	114.02	1387.20	113.12	1388.10	0.90	
9/28/2017	1501.22	113.38	1387.84	112.93	1388.29	0.45	
10/19/2017	1501.22	113.48	1387.74	113.05	1388.17	0.43	
6/4/2018	1501.22	114.80	1386.42	113.28	1387.94	1.52	
6/8/2018	1501.22	114.29	1386.93	113.49	1387.73	0.80	
6/25/2018	1501.22	NM	NM	NM	NM	NM	
7/19/2018	1501.22	114.15	1387.07	113.33	1387.89	0.82	
8/2/2018	1501.22	113.67	1387.55	113.16	1388.06	0.51	

**Table 1 - Groundwater and Free Product Elevations
PS09 Mainline Turbine Sump**

Well Name	Date	Well Elevation (feet above MSL) ^A	Depth to Groundwater (feet)	Groundwater Elevation ^B (feet above MSL)	Depth to Free Product (feet)	Free Product Elevation (feet above MSL)	Apparent Free Product Thickness (feet)
MW-5 Continued	8/16/2018	1501.22	113.71	1387.51	113.21	1388.01	0.50
	9/4/2018	1501.22	113.55	1387.67	113.11	1388.11	0.44
	9/18/2018	1501.22	113.16	1388.06	112.98	1388.24	0.18
	10/1/2018	1501.22	112.85	1388.37	112.72	1388.50	0.13
	5/24/2019	1501.22	110.78	1390.44	110.45	1390.77	0.33
	5/31/2019	1501.22	NM	NM	NM	NM	NM
	6/14/2019	1501.22	110.78	1390.44	110.46	1390.76	0.32
	6/28/2019	1501.22	111.03	1390.19	110.65	1390.57	0.38
	7/12/2019	1501.22	111.02	1390.20	110.64	1390.58	0.38
	7/31/2019	1501.22	111.20	1390.02	110.80	1390.42	0.40
	8/9/2019	1501.22	111.28	1389.94	110.92	1390.30	0.36
	8/30/2019	1501.22	111.47	1389.75	111.07	1390.15	0.40
	9/13/2019	1501.22	111.15	1390.07	110.89	1390.33	0.26
	9/27/2019	1501.22	111.60	1389.62	111.15	1390.07	0.45
	10/14/2019	1501.22	111.03	1390.19	110.84	1390.38	0.19
	10/30/2019	1501.22	110.75	1390.47	110.62	1390.60	0.13
	7/1/2020	1501.22	106.54	1394.68	106.24	1394.98	0.30
	7/29/2020	1501.22	106.02	1395.20	104.70	1396.52	1.32
	8/11/2020	1501.22	105.10	1396.12	104.42	1396.80	0.68
	8/24/2020	1501.22	104.51	1396.71	103.89	1397.33	0.62
	9/15/2020	1501.22	104.29	1396.93	103.34	1397.88	0.95
	9/29/2020	1501.22	104.41	1396.81	103.83	1397.39	0.58
	10/14/2020	1501.22	104.23	1396.99	103.59	1397.63	0.64
	11/11/2020	1501.01	103.93	1397.08	102.47	1398.54	1.46
	6/1/2021	1501.01	108.10	1392.91	103.50	1397.51	4.60
	6/15/2021	1501.01	108.06	1392.95	103.82	1397.19	4.24
	7/9/2021	1501.01	107.58	1393.43	104.20	1396.81	3.38
	7/1/2021	1501.01	105.56	1395.45	104.66	1396.35	0.90
	8/12/2021	1501.01	106.19	1394.82	104.99	1396.02	1.20
	8/26/2021	1501.01	106.05	1394.96	105.30	1395.71	0.75
	10/1/2021	1501.01	106.94	1394.07	105.35	1395.66	1.59
	5/19/2022	1501.01	108.83	1392.18	108.70	1392.31	0.13
	6/7/2022	1501.01	108.08	1392.93	107.95	1393.06	0.13
	7/8/2022	1501.01	107.90	1393.11	106.48	1394.53	1.42
	7/26/2022	1501.01	107.50	1393.51	106.51	1394.50	0.99
	8/16/2022	1501.01	106.45	1394.56	105.97	1395.04	0.48
	8/25/2022	1501.01	106.25	1394.76	106.05	1394.96	0.20
	9/8/2022	1501.01	106.07	1394.94	105.80	1395.21	0.27
	9/20/2022	1501.01	106.36	1394.65	106.08	1394.93	0.28
	10/17/2022	1501.01	106.32	1394.69	105.81	1395.20	0.51
5/23/2023	1501.01	108.38	1392.63	108.30	1392.71	0.08	
6/1/2023	1501.01	108.38	1392.63	108.25	1392.76	0.13	
6/22/2023	1501.01	108.11	1392.90	108.04	1392.97	0.07	
7/11/2023	1501.01	108.10	1392.91	107.95	1393.06	0.15	
8/4/2023	1501.01	107.97	1393.04	107.79	1393.22	0.18	
8/29/2023	1501.01	107.94	1393.07	107.54	1393.47	0.40	
9/23/2023	1501.01	108.16	1392.85	108.11	1392.90	0.05	
5/28/2024	1501.01	109.71	1391.30	109.45	1391.56	0.26	
6/14/2024	1501.01	109.89	1391.12	109.62	1391.39	0.27	
6/27/2024	1501.01	109.75	1391.26	109.53	1391.48	0.22	
7/11/2024	1501.01	109.84	1391.17	109.60	1391.41	0.24	
8/7/2024	1501.01	109.95	1391.06	109.68	1391.33	0.27	
9/10/2024	1501.01	110.18	1390.83	109.88	1391.13	0.30	
MW-6	11/21/1998	1501.21	112.66	1388.55	110.52	1390.69	2.14
	12/1/1998	1501.21	113.55	1387.66	110.45	1390.76	3.10
	6/9/1999	1501.21	115.92	1385.29	110.59	1390.62	5.33
	9/16/1999	1501.21	111.82	1389.39	111.79	1389.42	0.03
	10/7/1999	1501.21	111.97	1389.24	111.69	1389.52	0.28
	11/11/1999	1501.21	112.53	1388.68	111.73	1389.48	0.80
	5/17/2000	1501.21	110.85	1390.36	NM	NM	NM
	12/29/2000	1501.21	103.00	1398.21	102.15	1399.06	0.85
	7/19/2001	1501.32	104.50	1396.82	102.23	1399.09	2.27
	9/20/2001	1501.32	106.10	1395.22	103.20	1398.12	2.90
	6/11/2002	1501.32	110.49	1390.83	108.45	1392.87	2.04
	10/2/2002	1501.32	109.56	1391.76	109.38	1391.94	0.18
	6/4/2003	1501.32	116.13	1385.19	109.19	1392.13	6.94
	6/23/2003	1501.32	110.33	1390.99	110.18	1391.14	0.15

**Table 1 - Groundwater and Free Product Elevations
PS09 Mainline Turbine Sump**

Well Name	Date	Well Elevation (feet above MSL) ^A	Depth to Groundwater (feet)	Groundwater Elevation ^B (feet above MSL)	Depth to Free Product (feet)	Free Product Elevation (feet above MSL)	Apparent Free Product Thickness (feet)
MW-6 Continued	7/24/2003	1501.32	110.53	1390.79	110.42	1390.90	0.11
	8/28/2003	1501.32	110.92	1390.40	110.78	1390.54	0.14
	9/15/2003	1501.32	111.12	1390.20	110.97	1390.35	0.15
	10/3/2003	1501.32	110.96	1390.36	110.81	1390.51	0.15
	6/2/2004	1501.32	111.87	1389.45	110.99	1390.33	0.88
	6/3/2004	1501.32	111.20	1390.12	111.18	1390.14	0.02
	6/10/2004	1501.32	110.86	1390.46	NM	NM	NM
	7/8/2004	1501.32	110.47	1390.85	110.43	1390.89	0.04
	7/20/2004	1501.32	110.30	1391.02	110.22	1391.10	0.08
	8/12/2004	1501.32	110.03	1391.29	109.96	1391.36	0.07
	9/2/2004	1501.32	109.94	1391.38	109.86	1391.46	0.08
	10/19/2004	1501.32	110.16	1391.16	109.80	1391.52	0.36
	6/20/2005	1501.32	111.65	1389.67	109.40	1391.92	2.25
	6/28/2005	1501.32	109.51	1391.81	109.51	1391.81	0.00
	10/17/2005	1501.32	109.22	1392.10	109.21	1392.11	0.01
	5/31/2006	1501.32	113.28	1388.04	110.36	1390.96	2.92
	7/13/2006	1501.32	111.23	1390.09	110.77	1390.55	0.46
	10/5/2006	1501.32	110.02	1391.30	107.72	1393.60	2.30
	5/30/2007	1501.32	112.79	1388.53	108.09	1393.23	4.70
	7/18/2007	1501.32	109.81	1391.51	109.28	1392.04	0.53
	8/3/2007	1501.32	109.64	1391.68	109.62	1391.70	0.02
	8/17/2007	1501.32	109.53	1391.79	N/A	N/A	0.00
	9/13/2007	1501.32	109.71	1391.61	N/A	N/A	0.00
	9/21/2007	1501.32	109.65	1391.67	N/A	N/A	0.00
	10/5/2007	1501.32	109.71	1391.61	N/A	N/A	0.00
	10/12/2007	1501.32	109.38	1391.94	109.32	1392.00	0.06
	11/2/2007	1501.32	109.56	1391.76	109.20	1392.12	0.36
	4/16/2008	1501.32	111.79	1389.53	109.10	1392.22	2.69
	6/2/2008	1501.32	112.23	1389.09	109.39	1391.93	2.84
	7/1/2008	1501.32	110.36	1390.96	110.30	1391.02	0.06
	7/18/2008	1501.32	110.42	1390.90	110.38	1390.94	0.04
	7/23/2008	1501.32	110.54	1390.78	110.51	1390.81	0.03
	8/12/2008	1501.32	110.10	1391.22	N/A	N/A	0.00
	9/3/2008	1501.32	110.00	1391.32	109.65	1391.67	0.35
	9/12/2008	1501.32	109.55	1391.77	109.15	1392.17	0.40
	10/8/2008	1501.32	108.43	1392.89	106.25	1395.07	2.18
	7/17/2009	1501.32	108.12	1393.20	104.46	1396.86	3.66
	8/7/2010	1501.32	112.59	1388.73	109.48	1391.84	3.11
	8/23/2010	1501.32	110.10	1391.22	109.44	1391.88	0.66
	9/25/2010	1501.32	108.49	1392.83	107.59	1393.73	0.90
	10/8/2010	1501.32	108.30	1393.02	107.40	1393.92	0.90
	10/12/2010	1501.32	107.78	1393.54	107.29	1394.03	0.49
	6/24/2011	1501.32	NM	NM	N/A	N/A	N/A
	7/18/2011	1501.32	NM	NM	N/A	N/A	N/A
	7/26/2011	1501.32	NM	NM	N/A	N/A	N/A
	8/8/2011	1501.32	NM	NM	N/A	N/A	N/A
8/22/2011	1501.32	110.90	1390.42	108.09	1393.23	2.81	
9/9/2011	1501.32	108.91	1392.41	108.90	1392.42	0.01	
9/19/2011	1501.32	108.62	1392.70	108.61	1392.71	0.01	
10/6/2011	1501.32	108.53	1392.79	108.52	1392.80	0.01	
10/26/2011	1501.32	108.53	1392.79	108.52	1392.80	0.01	
6/5/2012	1501.32	110.09	1391.23	109.71	1391.61	0.38	
6/20/2012	1501.32	110.20	1391.12	109.82	1391.50	0.38	
7/5/2012	1501.32	110.12	1391.20	109.75	1391.57	0.37	
7/20/2012	1501.32	110.10	1391.22	109.62	1391.70	0.48	
8/3/2012	1501.32	110.15	1391.17	109.77	1391.55	0.38	
8/9/2012	1501.32	110.05	1391.27	109.69	1391.63	0.36	
8/23/2012	1501.32	109.62	1391.70	109.59	1391.73	0.03	
9/6/2012	1501.32	109.77	1391.55	109.75	1391.57	0.02	
9/21/2012	1501.32	109.71	1391.61	109.70	1391.62	0.01	
10/8/2012	1501.32	109.79	1391.53	109.78	1391.54	0.01	
10/22/2012	1501.32	109.83	1391.49	109.82	1391.50	0.01	
6/19/2013	1501.32	112.26	1389.06	110.96	1390.36	1.30	
6/27/2013	1501.32	112.41	1388.91	111.12	1390.20	1.29	
7/19/2013	1501.32	112.51	1388.81	111.20	1390.12	1.31	
8/2/2013	1501.32	111.41	1389.91	111.40	1389.92	0.01	
8/14/2013	1501.32	111.55	1389.77	111.55	1389.77	0.00	

**Table 1 - Groundwater and Free Product Elevations
PS09 Mainline Turbine Sump**

Well Name	Date	Well Elevation (feet above MSL) ^A	Depth to Groundwater (feet)	Groundwater Elevation ^B (feet above MSL)	Depth to Free Product (feet)	Free Product Elevation (feet above MSL)	Apparent Free Product Thickness (feet)
MW-6 Continued	8/29/2013	1501.32	111.62	1389.70	111.60	1389.72	0.02
	9/12/2013	1501.32	111.73	1389.59	111.72	1389.60	0.01
	10/4/2013	1501.32	111.77	1389.55	111.76	1389.56	0.01
	10/17/2013	1501.32	111.79	1389.53	111.78	1389.54	0.01
	6/3/2014	1501.32	113.11	1388.21	112.80	1388.52	0.31
	7/9/2014	1501.32	113.14	1388.18	112.90	1388.42	0.24
	7/28/2014	1501.32	113.07	1388.25	112.94	1388.38	0.13
	8/7/2014	1501.32	112.89	1388.43	112.80	1388.52	0.09
	8/26/2014	1501.32	112.68	1388.64	112.64	1388.68	0.04
	9/23/2014	1501.32	112.41	1388.91	112.40	1388.92	0.01
	10/9/2014	1501.32	112.01	1389.31	N/A	N/A	0.00
	6/4/2015	1501.32	NM	NM	NM	NM	NM
	7/3/2015	1501.32	NM	NM	NM	NM	NM
	7/14/2015	1501.32	111.65	1389.67	111.54	1389.78	0.11
	7/21/2015	1501.32	111.65	1389.67	111.56	1389.76	0.09
	8/12/2015	1501.32	111.94	1389.38	N/A	N/A	0.00
	8/25/2015	1501.32	111.85	1389.47	N/A	N/A	0.00
	9/13/2015	1501.32	111.91	1389.41	N/A	N/A	0.00
	10/1/2015	1501.32	112.07	1389.25	N/A	N/A	0.00
	6/1/2016	1501.32	111.69	1389.63	111.61	1389.71	0.08
	6/2/2016	1501.32	111.74	1389.58	111.66	1389.66	0.08
	6/7/2016	1501.32	NM	NM	NM	NM	NM
	6/11/2016	1501.32	111.95	1389.37	111.85	1389.47	0.10
	6/27/2016	1501.32	112.02	1389.30	112.01	1389.31	0.01
	7/10/2016	1501.32	112.05	1389.27	112.04	1389.28	0.01
	8/5/2016	1501.32	112.20	1389.12	112.18	1389.14	0.02
	8/18/2016	1501.32	112.27	1389.05	112.22	1389.10	0.05
	9/5/2016	1501.32	112.22	1389.10	112.21	1389.11	0.01
	9/16/2016	1501.32	112.21	1389.11	N/A	N/A	0.00
	10/3/2016	1501.32	112.38	1388.94	112.37	1388.95	0.01
10/13/2016	1501.32	112.26	1389.06	112.25	1389.07	0.01	
Well Decommissioned in 2017			NM	NM	NM	NM	NM
MW-7	11/21/1998	1498.75	112.83	1385.92	N/A	N/A	0.00
	12/1/1998	1498.75	112.95	1385.80	N/A	N/A	0.00
	9/16/1999	1498.75	116.86	1381.89	N/A	N/A	0.00
	11/11/1999	1498.75	116.87	1381.88	N/A	N/A	0.00
	5/17/2000	1498.75	116.55	1382.20	N/A	N/A	0.00
	7/14/2000	1498.75	116.56	1382.19	N/A	N/A	0.00
	3/27/2001	1502.44	NM	NM	N/A	N/A	0.00
	7/12/2001	1502.44	103.82	1398.62	N/A	N/A	0.00
	9/21/2001	1502.44	112.66	1389.78	N/A	N/A	0.00
	11/19/2001	1502.44	113.53	1388.91	N/A	N/A	0.00
	6/12/2002	1502.44	115.12	1387.32	N/A	N/A	0.00
	10/4/2002	1502.44	114.77	1387.67	N/A	N/A	0.00
	6/24/2003	1502.44	114.71	1387.73	N/A	N/A	0.00
	10/1/2003	1502.44	114.99	1387.45	N/A	N/A	0.00
	6/11/2004	1502.44	114.88	1387.56	N/A	N/A	0.00
	10/18/2004	1502.44	114.50	1387.94	N/A	N/A	0.00
	6/27/2005	1502.44	114.26	1388.18	N/A	N/A	0.00
	10/17/2005	1502.44	114.04	1388.40	N/A	N/A	0.00
	6/2/2006	1502.44	114.73	1387.71	N/A	N/A	0.00
	10/5/2006	1502.44	113.52	1388.92	N/A	N/A	0.00
	7/17/2007	1502.44	114.06	1388.38	N/A	N/A	0.00
	10/4/2007	1502.44	114.37	1388.07	N/A	N/A	0.00
	7/24/2008	1502.44	114.76	1387.68	N/A	N/A	0.00
	7/17/2009	1502.44	111.38	1391.06	N/A	N/A	0.00
	8/11/2010	1502.44	115.50	1386.94	N/A	N/A	0.00
	9/8/2011	1502.44	115.18	1387.26	N/A	N/A	0.00
	7/20/2012	1502.44	115.09	1387.35	N/A	N/A	0.00
	8/22/2013	1502.44	115.75	1386.69	N/A	N/A	0.00
	9/19/2013	1502.44	115.69	1386.75	N/A	N/A	0.00
	6/5/2014	1502.44	116.02	1386.42	N/A	N/A	0.00
7/15/2015	1502.44	115.44	1387.00	N/A	N/A	0.00	
6/6/2016	1502.44	114.00	1388.44	N/A	N/A	0.00	
6/7/2017	1502.44	114.97	1387.47	N/A	N/A	0.00	
5/30/2019	1502.44	114.81	1387.63	N/A	N/A	0.00	
6/1/2021	1502.44	112.57	1389.87	N/A	N/A	0.00	

**Table 1 - Groundwater and Free Product Elevations
PS09 Mainline Turbine Sump**

Well Name	Date	Well Elevation (feet above MSL) ^A	Depth to Groundwater (feet)	Groundwater Elevation ^B (feet above MSL)	Depth to Free Product (feet)	Free Product Elevation (feet above MSL)	Apparent Free Product Thickness (feet)
MW-7 Cont	5/22/2023	1502.44	115.41	1387.03	N/A	N/A	0.00
MW-8	11/22/1998	1498.64	113.34	1385.30	N/A	N/A	0.00
	12/1/1998	1498.64	113.67	1384.97	N/A	N/A	0.00
	6/9/1999	1498.64	113.98	1384.66	N/A	N/A	0.00
	9/17/1999	1498.64	114.52	1384.12	N/A	N/A	0.00
	5/17/2000	1498.64	115.02	1383.62	N/A	N/A	0.00
	7/14/2000	1498.64	115.24	1383.40	N/A	N/A	0.00
	10/13/2000	1498.64	112.60	1386.04	N/A	N/A	0.00
	3/27/2001	1498.37	NM	NM	N/A	N/A	0.00
	7/12/2001	1498.37	99.45	1398.92	N/A	N/A	0.00
	9/21/2001	1498.37	100.39	1397.98	N/A	N/A	0.00
	11/19/2001	1498.37	NM	NM	N/A	N/A	0.00
	6/12/2002	1498.37	106.21	1392.16	N/A	N/A	0.00
	10/4/2002	1498.37	108.68	1389.69	N/A	N/A	0.00
	6/25/2003	1498.37	114.64	1383.73	N/A	N/A	0.00
	10/1/2003	1498.37	114.77	1383.60	N/A	N/A	0.00
	6/11/2004	1498.37	115.16	1383.21	N/A	N/A	0.00
	10/18/2004	1498.37	115.28	1383.09	N/A	N/A	0.00
	6/27/2005	1498.37	114.49	1383.88	N/A	N/A	0.00
	10/16/2005	1498.37	114.77	1383.60	N/A	N/A	0.00
	6/2/2006	1498.37	NM	NM	N/A	N/A	0.00
	10/5/2006	1498.37	113.55	1384.82	N/A	N/A	0.00
	7/17/2007	1498.37	114.67	1383.70	N/A	N/A	0.00
	10/4/2007	1498.37	114.70	1383.67	N/A	N/A	0.00
	7/24/2008	1498.37	114.89	1383.48	N/A	N/A	0.00
	7/18/2009	1498.37	101.56	1396.81	N/A	N/A	0.00
	8/11/2010	1498.37	109.79	1388.58	N/A	N/A	0.00
	9/8/2011	1498.37	110.10	1388.27	N/A	N/A	0.00
	7/20/2012	1498.37	111.38	1386.99	N/A	N/A	0.00
	8/22/2013	1498.37	114.46	1383.91	N/A	N/A	0.00
	9/19/2013	1498.37	114.67	1383.70	N/A	N/A	0.00
6/5/2014	1498.37	114.89	1383.48	N/A	N/A	0.00	
7/15/2015	1498.37	114.17	1384.20	N/A	N/A	0.00	
6/7/2016	1498.37	114.60	1383.77	N/A	N/A	0.00	
6/7/2017	1498.37	115.31	1383.06	N/A	N/A	0.00	
5/30/2019	1498.37	113.38	1384.99	N/A	N/A	0.00	
6/1/2021	1498.37	101.12	1397.25	N/A	N/A	0.00	
5/22/2023	1498.37	108.49	1389.88	N/A	N/A	0.00	
MW-10	12/1/1998	1501.01	110.61	1390.40	N/A	N/A	0.00
	6/9/1999	1501.01	111.12	1389.89	N/A	N/A	0.00
	9/16/1999	1501.01	111.49	1389.52	N/A	N/A	0.00
	11/11/1999	1501.01	111.62	1389.39	N/A	N/A	0.00
	5/17/2000	1501.01	110.53	1390.48	N/A	N/A	0.00
	7/16/2000	1501.01	110.19	1390.82	N/A	N/A	0.00
	10/11/2000	1501.01	108.60	1392.41	N/A	N/A	0.00
	3/27/2001	1501.01	101.05	1399.96	N/A	N/A	0.00
	7/12/2001	1501.01	102.54	1398.47	N/A	N/A	0.00
	9/20/2001	1501.01	103.50	1397.51	N/A	N/A	0.00
	11/19/2001	1501.01	104.71	1396.30	N/A	N/A	0.00
	6/12/2002	1501.01	108.42	1392.59	N/A	N/A	0.00
	10/3/2002	1501.01	108.82	1392.19	N/A	N/A	0.00
	6/24/2003	1501.01	109.67	1391.34	N/A	N/A	0.00
	10/2/2003	1501.01	110.26	1390.75	N/A	N/A	0.00
	6/10/2004	1501.01	110.33	1390.68	N/A	N/A	0.00
	10/19/2004	1501.01	109.21	1391.80	N/A	N/A	0.00
	6/28/2005	1501.01	109.02	1391.99	N/A	N/A	0.00
	10/16/2005	1501.01	108.80	1392.21	N/A	N/A	0.00
	6/1/2006	1501.01	110.41	1390.60	N/A	N/A	0.00
	10/6/2006	1501.01	107.60	1393.41	N/A	N/A	0.00
	7/17/2007	1501.01	108.80	1392.21	N/A	N/A	0.00
	10/4/2007	1501.01	108.70	1392.31	N/A	N/A	0.00
	7/24/2008	1501.01	110.13	1390.88	N/A	N/A	0.00
	7/17/2009	1501.01	104.74	1396.27	N/A	N/A	0.00
8/12/2010	1501.01	109.47	1391.54	N/A	N/A	0.00	
9/8/2011	1501.01	102.88	1398.13	N/A	N/A	0.00	
7/20/2012	1501.01	109.20	1391.81	N/A	N/A	0.00	

**Table 1 - Groundwater and Free Product Elevations
PS09 Mainline Turbine Sump**

Well Name	Date	Well Elevation (feet above MSL) ^A	Depth to Groundwater (feet)	Groundwater Elevation ^B (feet above MSL)	Depth to Free Product (feet)	Free Product Elevation (feet above MSL)	Apparent Free Product Thickness (feet)
MW-10 Continued	8/22/2013	1501.01	111.10	1389.91	N/A	N/A	0.00
	9/19/2013	1501.01	111.23	1389.78	N/A	N/A	0.00
	6/3/2014	1501.01	112.44	1388.57	N/A	N/A	0.00
	7/15/2015	1501.01	111.30	1389.71	N/A	N/A	0.00
	6/7/2016	1501.01	111.42	1389.59	N/A	N/A	0.00
	6/6/2017	1501.01	112.50	1388.51	N/A	N/A	0.00
	5/30/2019	1501.01	109.89	1391.12	N/A	N/A	0.00
	6/1/2021	1501.01	104.02	1396.99	N/A	N/A	0.00
	5/22/2023	1501.01	107.98	1393.03	N/A	N/A	0.00

Notes:

- A 2001 and later elevation data based on December 2001 survey
- B Recovery well groundwater elevations have not been corrected to account for presence of free product

Abbreviations:

- MSL mean sea level
- N/A not applicable; no measurable free product
- NM not measured

Table 2 - 1998-2024
MW-1 Summary of Product Gauging and Recovery
PS09 Mainline Turbine Sump

Year	Date	Description	Amount Recovered (gal), Unadjusted	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	
1998 to 2010 Maximum Apparent Thickness ^A	11/22/1998	--	N/A	114.54	114.73	0.19	
	10/7/1999	--	N/A	115.48	116.71	1.23	
	12/28/2000	--	N/A	104.80	112.00	7.20	
	7/19/2001	--	N/A	101.92	106.40	4.48	
	6/10/2002	--	N/A	108.56	108.90	0.34	
	6/3/2003	--	N/A	110.12	111.07	0.95	
	6/2/2004	--	N/A	110.99	111.89	0.90	
	5/31/2006	--	N/A	110.70	111.41	0.71	
	6/2/2008	--	N/A	109.80	110.22	0.42	
	7/17/2009	--	N/A	104.48	108.36	3.88	
	10/8/2010	--	N/A	107.43	108.25	0.82	
2011	6/24/2011	Initial Measurement	N/A	107.94	108.94	1.00	
		Deployment 1	0.1875	108.03	108.3	0.27	
		Deployment 2	0.025	108.03	108.25	0.22	
		Deployment 3	0.125	108.08	108.1	0.02	
	7/18/2011	Initial Measurement	N/A	108.34	109.02	0.68	
		Deployment 1	0.0625	108.39	108.61	0.22	
		Deployment 2	0.125	108.41	108.44	0.03	
	7/26/2011	Initial Measurement	N/A	108.45	108.64	0.19	
		Deployment 1	sheen	108.5	108.53	0.03	
	8/8/2011	Initial Measurement	0.0825	108.69	108.75	0.06	
		Deployment 1	0.0125	108.7	108.71	0.01	
	8/22/2011	Initial Measurement	0.0625	108.53	108.54	0.01	
	9/9/2011	Initial Measurement	0.0625	108.84	108.86	0.02	
	9/19/2011	Initial Measurement	sheen	108.6	108.61	0.01	
	10/6/2011	Initial Measurement	sheen	108.51	108.52	0.01	
	10/26/2011	Initial Measurement	0.025	108.56	108.57	0.01	
	2012	8/9/2012	Initial Measurement	N/A	109.70	110.06	0.36
8/23/2012		Initial Measurement	0.0625	109.58	109.78	0.2	
9/6/2012		Initial Measurement	sheen	109.75	109.90	0.15	
		Deploy 2" Rigid Sorbent	0.162	109.75	109.90	0.15	
		Deploy 2" Rigid Sorbent	0.162	NM	NM	NM	
		Deploy 2" Rigid Sorbent	0.162	109.78	109.80	0.02	
		Initial Measurement	0.031	109.69	109.83	0.14	
9/21/2012		Deploy 2" Rigid Sorbent	0.162	NM	NM	NM	
		Deploy 2" Rigid Sorbent	0.162	NM	NM	NM	
		Deploy 2" Rigid Sorbent	0.081	NM	NM	NM	
		Deploy 2" Rigid Sorbent	0.081	109.70	109.73	0.03	
		Initial Measurement	0.005	109.75	109.88	0.13	
10/8/2012		Deploy 2" Rigid Sorbent	0.162	NM	NM	NM	
		Deploy 2" Rigid Sorbent	0.162	109.78	109.81	0.03	
		Deploy 2" Rigid Sorbent	0.162	109.80	109.81	0.01	
		Initial Measurement	0.005	109.78	109.89	0.11	
10/22/2012		Deploy 2" Rigid Sorbent	0.162	109.82	109.83	0.01	
		Deploy 2" Rigid Sorbent	0.162	109.82	109.83	0.01	
2013		6/19/2013	Frozen	N/A ^B	NM	NM	NM
		6/27/2013	Frozen	N/A ^B	NM	NM	NM
	7/19/2013	Frozen	N/A ^B	NM	NM	NM	
	8/2/2013	Frozen	N/A ^B	NM	NM	NM	
	8/14/2013	Frozen	N/A ^B	NM	NM	NM	
	8/29/2013	Initial Measurement	N/A	111.41	112.62	1.21	
		2" SoakEase deployment 1	0.17	111.44	112.45	1.01	
		2" SoakEase deployment 2	0.17	111.45	112.40	0.95	
		2" SoakEase deployment 3	0.25	111.49	112.32	0.83	
		2" SoakEase deployment 4	0.25	111.50	112.20	0.70	
		2" SoakEase (2 socks)	0.12	111.52	112.16	0.64	
		1.66" Product bailer	0.06	NM	NM	NM	
		2" SoakEase (2 socks)	0.12	111.56	112.04	0.48	
		2" SoakEase (2 socks)	0.12	111.55	111.95	0.40	
		Initial Measurement	0.00	111.60	112.39	0.79	
	9/12/2013	2" SoakEase deployment 1	0.12	111.62	112.24	0.62	
		2" SoakEase deployment 2	0.25	111.64	112.15	0.51	
		2" SoakEase deployment 3	0.25	111.65	112.10	0.45	
		2" SoakEase deployment 4	0.25	111.66	112.04	0.38	
		2" SoakEase deployment 5	0.25	111.67	112.04	0.37	
	10/4/2013	Initial Measurement	0.25	111.69	112.43	0.74	
		2" SoakEase deployments 1-2	0.50	111.73	112.23	0.50	
		2" SoakEase deployments 3-4	0.50	111.74	112.15	0.41	
		2" SoakEase deployments 5-6	0.50	111.78	111.96	0.18	
		2" SoakEase deployments 7-8	0.50	111.79	111.88	0.09	
		2" SoakEase deployments 9-10	0.50	111.79	111.80	0.01	
	10/17/2013	Initial Measurement	0.12	111.68	112.01	0.33	
		2" SoakEase deployment 1	0.12	111.72	111.84	0.12	
		2" SoakEase deployment 2	0.25	111.74	111.80	0.06	
		2" SoakEase deployment 3	0.06	111.74	111.76	0.02	
2014	5/8/2014	Initial Measurement	N/A ^B	112.43	114.15	1.72	
	6/3/2014	Initial Measurement	N/A ^B	112.57	114.28	1.71	
	6/4/2014 ^D	Initial Measurement	N/A	112.60	114.32	1.72	

Table 2 - 1998-2024
MW-1 Summary of Product Gauging and Recovery
PS09 Mainline Turbine Sump

Year	Date	Description	Amount Recovered (gal), Unadjusted	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
2014 Continued	6/4/2014 ^D	Submersible pump	1.50	112.83	112.96	0.13
		2" SoakEase deployment 1	0.20	112.81	113.12	0.31
		2" SoakEase deployment 2	0.13	112.80	113.10	0.30
		2" SoakEase deployment 3	0.07	112.83	113.00	0.17
		2" SoakEase deployment 4	0.03	112.83	112.96	0.13
	6/5/2014 ^D	Final Measurement	N/A	112.73	113.19	0.46
	7/9/2014	Initial Measurement	N/A	112.81	113.80	0.99
		1.66" Product bailer	0.38	112.88	113.35	0.47
	7/28/2014	Initial Measurement	N/A	112.85	113.63	0.78
		1.66" Product bailer	0.38	112.91	113.18	0.27
		2" SoakEase deployment 1	0.15	112.93	113.07	0.14
		2" SoakEase deployment 2	0.15	112.94	112.96	0.02
	8/7/2014	Initial Measurement	N/A	112.74	113.55	0.81
		1.66" Product bailer	0.20	112.80	113.13	0.33
	8/26/2014	Initial Measurement	N/A	112.53	113.48	0.95
		1.66" Product bailer	0.40	112.62	113.05	0.43
		2" SoakEase deployment 1	0.10	112.68	112.69	0.01
	9/23/2014	Initial Measurement	N/A	112.29	112.93	0.64
		1.66" Product bailer	0.25	112.32	112.72	0.40
		2" SoakEase (3 socks)	0.25	112.38	112.39	0.01
10/9/2014	Initial Measurement	N/A	112.00	112.43	0.43	
	2" SoakEase (3 socks)	0.55 ^C	112.01	112.43	0.42	
2015	6/4/2015	Initial Measurement	N/A ^B	N/A	N/A	N/A
	7/3/2015	Initial Measurement	N/A ^B	N/A	N/A	N/A
	7/14/2015	Initial Measurement	N/A	111.48	112.06	0.58
	7/22/2015 ^D	Initial Measurement	N/A	111.44	111.92	0.48
		1.66" Product bailer		111.43	111.70	0.27
		2" SoakEase (2 socks)	0.26	111.43	111.72	0.29
	8/12/2015	Initial Measurement ^C	N/A	111.72	112.14	0.42
		1.66" Product bailer	0.26	111.76	111.99	0.23
	8/25/2015	Initial Measurement ^C	0.12	111.82	112.11	0.29
		2" SoakEase (2 socks)	0.13	111.82	111.84	0.02
	9/13/2015	Initial Measurement ^C	N/A	111.82	112.11	0.29
		2" SoakEase (2 socks)	0.21	111.82	111.84	0.02
	10/1/2015	Initial Measurement ^C	N/A	112.08	112.28	0.20
		1.66" Product bailer	0.1	NM	NM	NM
2" SoakEase (2 socks)		0.25	NM	NM	NM	
2016	6/1/2016	Frozen	N/A ^B	NM	NM	NM
	6/2/2016	Initial Measurement	N/A	111.64	112.23	0.59
	6/7/2016	1.66" Product bailer	0.14	111.78	112.54	0.76
	6/11/2016	Initial 2" SoakEase Recovery ^C	0.08	111.78	112.27	0.49
		2" SoakEase (4 socks)	0.50	111.85	111.86	0.01
	6/27/2016	Initial 2" SoakEase Recovery ^C	0.13	111.93	112.25	0.32
		2" SoakEase (2 socks)	0.25	112.01	112.14	0.13
	7/10/2016	Initial Measurement	N/A	112.03	112.24	0.21
		2" SoakEase (2 socks)	0.17	112.05	112.09	0.04
	8/5/2016	Initial 2" SoakEase Recovery ^C	0.20	112.19	112.26	0.07
		2" SoakEase (1 sock)	0.06	112.19	112.24	0.05
	8/18/2016	Initial 2" SoakEase Recovery ^C	0.17	112.24	112.34	0.10
		2" SoakEase (1 sock)	0.08	112.25	112.26	0.01
	9/5/2016	Initial 2" SoakEase Recovery ^C	0.13	112.18	112.29	0.11
		1.66" Product bailer	0.09	112.20	112.21	0.01
	9/16/2016	Initial Measurement	N/A	112.22	112.33	0.11
		2" SoakEase (2 socks)	0.15	112.22	112.23	0.01
10/3/2016	Initial Measurement	N/A	112.33	112.59	0.26	
	1.66" Product bailer	0.06	112.36	112.49	0.13	
	2" SoakEase (2 socks)	0.17	NM	112.39	0.00	
10/13/2016	Initial Measurement	N/A	112.25	112.42	0.17	
	2" SoakEase (2 socks)	0.26	112.28	112.28	0.00	
2017	5/25/2017	Frozen	N/A ^B	NM	NM	NM
	5/26/2017	Initial Measurement	N/A	112.78	114.03	1.25
	6/5/2017 to 6/7/2017	Initial Measurement	N/A	112.76	114.17	1.41
		1.66" Product bailer	0.92	NM	NM	0.20
		1.66" Product bailer	0.26	NM	NM	NM
		2" SoakEase (2 socks)	0.25	NM	NM	NM
	6/27/2017	2" SoakEase (1 sock)	0.06	112.96	113.11	0.15
		Initial 2" SoakEase Recovery ^C	0.13	112.99	113.33	0.34
	7/24/2017	2" SoakEase (2 socks)	0.38	NM	113.01	NM
		Initial 2" SoakEase Recovery ^C	0.13	113.14	113.43	0.29
		2" SoakEase (3 socks)	0.44	113.17	113.20	0.03
	9/14/2017	Initial 2" SoakEase Recovery ^C	0.25	113.2	113.61	0.41
		1.66" Product bailer	0.08	NM	NM	NM
	9/28/2017	2" SoakEase (3 socks)	0.50	113.24	113.29	0.05
		Initial 2" SoakEase Recovery ^C	0.25	113.16	113.45	0.29
10/19/2017	2" SoakEase (3 socks)	0.18	113.10	113.14	0.04	
	Initial 2" SoakEase Recovery ^C	0.13	113.16	113.35	0.19	
	2" SoakEase (3 socks)	0.25	113.18	113.19	0.01	

Table 2 - 1998-2024
MW-1 Summary of Product Gauging and Recovery
PS09 Mainline Turbine Sump

Year	Date	Description	Amount Recovered (gal), Unadjusted	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
2018	6/2/2018 to 6/4/2018	Initial Measurement	N/A	113.31	114.97	1.66
		1.66" Product bailer	1.45	113.45	113.82	0.37
		2" Soakease (3 socks)	0.31	113.50	113.69	0.19
	6/8/2018	Initial 2" SoakEase Recovery ^c	0.17	113.55	113.84	0.29
		1.66" Product bailer	0.02	NM	NM	NM
		2" Soakease (3 socks)	0.23	113.56	113.64	0.08
	6/25/2018	1.66" Product bailer	0.33	NM	NM	NM
		2" Soakease (3 socks)	0.17	NM	NM	NM
		Initial Measurement	N/A	113.52	113.77	0.25
	7/19/2018	1.66" Product bailer	0.13	NM	NM	NM
		2" Soakease (3 socks)	0.11	113.53	113.64	0.11
		Initial Measurement	N/A	113.31	113.59	0.28
	8/2/2018	1.66" Product bailer	0.26	NM	NM	NM
		2" Soakease (3 socks)	0.25	113.34	113.45	0.11
		Initial Measurement	N/A	113.29	113.99	0.70
	8/16/2018	1.66" Product bailer	0.20	NM	NM	NM
		2" Soakease (8 socks)	0.96	113.28	113.41	0.13
		Initial Measurement	N/A	113.22	113.90	0.68
	9/4/2018	1.66" Product bailer	0.26	NM	NM	NM
		2" Soakease (10 socks)	0.78	113.30	113.39	0.09
		Initial Measurement	N/A	113.10	113.31	0.21
	9/18/2018	1.66" Product bailer	0.06	NM	NM	NM
		2" Soakease (3 socks)	0.12	113.14	113.15	0.01
		Initial Measurement	N/A	112.82	113.14	0.32
2019	5/24/2019	Initial Measurement	N/A ^b	110.55	110.80	0.25
		2" Soakease (2 socks)	0.20	112.88	112.90	0.02
	5/31/2019	Initial Measurement	N/A	110.45	110.68	0.23
		2" Pig (5 socks)	0.50	ND	110.49	0.00
	6/14/2019	Initial Measurement	N/A	110.55	110.67	0.12
		2" Pig (4 socks)	0.26	110.56	110.57	0.01
	6/28/2019	Initial Measurement	N/A	110.77	110.94	0.17
		2" Soakease (5 socks)	0.53	ND	110.70	0.00
	7/12/2019	Initial Measurement	N/A	110.79	110.95	0.16
		2" Soakease (5 socks)	0.38	ND	110.82	0.00
	7/31/2019	Initial Measurement	N/A	110.94	111.10	0.16
		2" Soakease (4 socks)	0.38	ND	110.95	0.00
	8/9/2019	Initial Measurement	N/A	111.04	111.20	0.16
		2" Soakease (3 socks)	0.33	ND	111.07	0.00
	8/30/2019	Initial Measurement	N/A	111.19	111.35	0.16
		2" Soakease (3 socks)	0.25	ND	111.20	0.00
	9/13/2019	Initial Measurement	N/A	110.98	111.10	0.12
		2" Soakease (2 socks)	0.25	ND	111.03	0.00
	9/27/2019	Initial Measurement	N/A	111.30	111.50	0.20
		2" Soakease (2 socks)	0.19	ND	111.33	0.00
	10/14/2019	Initial Measurement	N/A	110.93	111.00	0.07
		2" Soakease (2 socks)	0.08	ND	110.94	0.00
	10/30/2019	Initial Measurement	N/A	110.77	110.81	0.04
		2" Soakease (2 socks)	0.06	ND	110.77	0.00
2020	7/1/2020	Well Thawing Trip	N/A ^b	NM ^b	NM ^b	NM ^b
	7/29/2020	Initial Measurement	N/A	104.91	105.52	0.61
		2" Soakease (5 socks)	1.09	104.98	105.00	0.02
	8/11/2020	Initial Measurement	N/A	104.58	104.88	0.30
		2" Soakease (4 socks)	0.59	ND	104.60	0.00
	8/24/2020	Initial Measurement	N/A	104.04	104.28	0.24
		2" Soakease (3 socks)	0.44	ND	104.07	0.00
	9/15/2020	Initial Measurement	N/A	103.55	103.80	0.25
		2" Soakease (3 socks)	0.53	ND	103.58	0.00
	9/29/2020	Initial Measurement	N/A	103.91	104.20	0.29
		2" Soakease (3 socks)	0.38	ND	103.99	0.00
	10/14/2020	Initial Measurement	N/A	103.68	103.97	0.29
2" Soakease (3 socks)		0.40	ND	103.78	0.00	
11/11/2020	Initial Measurement	N/A	103.00	103.15	0.15	
	2" Soakease (3 socks)	0.50	ND	103.03	0.00	
2021	6/15/2021	Initial Measurement	N/A	104.58	105.55	0.97
		1.66" Product bailer	0.25	NM	NM	NM
		2" Soakease (6 socks)	0.96	104.70	104.71	0.01
	7/9/2021	Initial Measurement	N/A	104.97	105.20	0.23
		2" Soakease (4 socks)	0.50	ND	104.99	0.00
	7/21/2021	Initial Measurement	N/A	105.06	105.17	0.11
		2" Soakease (3 socks)	0.44	ND	105.05	0.00
	8/12/2021	Initial Measurement	N/A	105.43	105.56	0.13
		2" Soakease (2 socks)	0.25	ND	105.45	0.00
	8/26/2021	Initial Measurement	N/A	105.65	105.80	0.15
2" Soakease (3 socks)		0.31	ND	105.68	0.00	
10/1/2021	Initial Measurement	N/A	105.89	106.06	0.17	
	2" Soakease (3 socks)	0.44	105.95	105.96	0.01	

Table 2 - 1998-2024
MW-1 Summary of Product Gauging and Recovery
PS09 Mainline Turbine Sump

Year	Date	Description	Amount Recovered (gal), Unadjusted	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
2022	5/19/2022	Initial Measurement	N/A	NM	NM	NM
	6/7/2022	Initial Measurement	N/A	108.18	108.39	0.21
		2" Soakease (2 socks)	0.19	108.21	108.21	0.00
	7/8/2022	Initial Measurement	N/A	106.96	107.11	0.15
		2" Soakease (2 socks)	0.19	107.00	107.00	0.00
	7/26/2022	Initial Measurement	N/A	106.92	107.02	0.10
		2" Soakease (2 socks)	0.19	106.93	106.93	0.00
	8/16/2022	Initial Measurement	N/A	106.28	106.38	0.10
		2" Soakease (2 socks)	0.13	106.31	106.31	0.00
	8/25/2022	Initial Measurement	N/A	106.31	106.45	0.14
		2" Soakease (2 socks)	0.13	106.32	106.32	0.00
	9/8/2022	Initial Measurement	N/A	106.10	106.15	0.05
		2" Soakease (2 socks)	0.00	106.12	106.12	0.00
	9/20/2022	Initial Measurement	N/A	106.37	106.50	0.13
2" Soakease (2 socks)		0.13	106.36	106.38	0.02	
10/17/2022	Initial Measurement	N/A	106.16	106.25	0.09	
	2" Soakease (5 socks)	0.00	106.18	106.18	0.00	
2023	5/23/2023	Initial Measurement	N/A	108.53	109.03	0.50
		2" Soakease (3 socks)	0.45	108.60	108.63	0.03
	6/1/2023	Initial Measurement	N/A	108.53	108.66	0.13
		2" Soakease (5 socks)	0.38	108.50	108.55	0.05
	6/22/2023	Initial Measurement	N/A	108.32	108.38	0.06
		2" Soakease (3 socks)	0.15	108.32	108.33	0.01
	7/11/2023	Initial Measurement	N/A	108.24	108.29	0.05
		2" Soakease (3 socks)	0.10	108.25	108.26	0.01
	8/4/2023	Initial Measurement	N/A	108.06	108.12	0.06
		2" Soakease (3 socks)	0.10	108.11	108.12	0.01
	8/29/2023	Initial Measurement	N/A	107.89	107.90	0.01
		2" Soakease (3 socks)	0.00	107.89	107.89	0.00
9/23/2023	Initial Measurement	N/A	108.11	108.16	0.05	
	2" Soakease (2 socks)	0.05	108.10	108.10	0.00	
2024	5/28/2024	Initial Measurement	N/A	109.79	109.80	0.01
		2" Soakease (3 socks)	0.00	109.80	109.80	0.00
	6/14/2024	Initial Measurement	N/A	109.96	109.97	0.01
		2" Soakease (5 socks)	0.00	109.97	109.97	0.00
	6/27/2024	Initial Measurement	N/A	109.84	109.85	0.01
		2" Soakease (3 socks)	0.00	109.85	109.85	0.00
	7/11/2024	Initial Measurement	N/A	109.98	109.98	0.00
		2" Soakease (3 socks)	0.00	109.98	109.98	0.00
	8/7/2024	Initial Measurement	N/A	110.00	110.00	0.00
		2" Soakease (3 socks)	0.00	110.00	110.00	0.00
9/10/2024	Initial Measurement	N/A	110.20	110.20	0.00	
	2" Soakease (3 socks)	0.00	110.20	110.20	0.00	
Product Recovery Summary	Year		Gallons	Percent of 2011-2024 Total Recovered Volume		
	1998-2010 ^A		N/A	N/A		
	2011		0.8	2%		
	2012		1.7	5%		
	2013		8.2	24%		
	2014		4.7	14%		
	2015		1.3	4%		
	2016		2.6	8%		
	2017		4.2	12%		
	2018		6.0	18%		
	2019 (Adjusted) ^E		1.2	3%		
	2020 (Adjusted) ^E		1.4	4%		
	2021 (Adjusted) ^E		1.3	4%		
	2022 (Adjusted) ^E		0.3	1%		
2023 (Adjusted) ^E		0.4	1%			
2024 (Adjusted) ^E		0.0	0%			
Total 2011 to 2024		34.2	--			
Notes:						
0.01 BOLD values indicate the maximum measured product thickness for each year.						
A Product recovery canisters were operated for recovery of product during this period, recovery volumes were not noted for individual wells.						
B Ice plug above product depth prevented canister or sock from being deployed for recovery.						
C Product measurement following removal of sorbent sock.						
D Product measurements during baildown test.						
E Total volume of recovered product from visual assessment of 2" Soak Ease™ socks is corrected using correction factor of 0.36 based on results of wringing 2" socks in 2020.						
Soak Ease™ 2" down-well socks absorb approximately 0.25 gallon of product each						
Soak Ease™ 4" down-well socks absorb approximately 0.75 gallon of product each						
Abbreviations:						
ft	feet		N/A	not applicable	ND	non detect
gal	gallons		NM	not measured		

Table 3 - 1998-2024
MW-5 Summary of Product Gauging and Recovery
PS09 Mainline Turbine Sump

Year	Date	Description	Amount Recovered (gal)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
1998 to 2010 Maximum Apparent Thickness ^A	12/1/1998	--	--	110.83	111.62	0.79
	9/16/1999	--	--	111.51	113.56	2.05
	12/29/2000	--	--	100.90	109.20	8.30
	7/19/2001	--	--	101.30	109.30	8.00
	6/10/2002	--	--	108.53	109.60	1.07
	6/3/2003	--	--	110.10	110.85	0.75
	6/2/2004	--	--	110.94	111.72	0.78
	6/20/2005	--	--	109.40	111.65	2.25
	5/31/2006	--	--	110.64	111.15	0.51
	5/30/2007	--	--	108.72	108.94	0.22
	7/1/2008	--	--	110.27	110.49	0.22
7/18/2009	--	--	104.42	108.25	3.83	
10/12/2010	--	--	107.12	108.12	1.00	
2011	6/24/2011	Frozen	N/A	NM	NM	N/A
	7/18/2011	Frozen	N/A	NM	NM	N/A
	7/26/2011	Frozen	N/A	NM	NM	N/A
	8/8/2011	Initial Measurement	N/A	108.61	108.8	0.19
		Deployment 1	0.75	108.63	108.75	0.12
		Deployment 2	0.75	108.64	108.7	0.06
	8/22/2011	Deployment 3	0.25	108.63	108.66	0.03
		Initial Measurement	N/A	108.42	108.6	0.18
		Deployment 1	0.33	108.45	108.53	0.08
	9/9/2011	Deployment 2	0.33	108.46	108.49	0.03
		Initial Measurement	1	108.8	108.86	0.06
		Deployment 1	0.75	108.84	108.87	0.03
	9/19/2011	Initial Measurement	1	108.54	108.61	0.07
Deployment 1		0.5	108.55	108.56	0.01	
10/6/2011	Initial Measurement	sheen	108.44	108.46	0.02	
10/26/2011	Initial Measurement	1	108.4	108.43	0.03	
2012	6/5/2012	Initial Measurement	N/A ^B	109.68	110.05	0.37
	6/20/2012	Initial Measurement	N/A ^B	109.77	110.13	0.36
	7/5/2012	Initial Measurement	N/A ^B	109.70	110.04	0.34
	7/20/2012	Initial Measurement	N/A	109.67	109.94	0.27
		Deployment 1	0.00	109.63	109.93	0.3
	8/3/2012	Initial Measurement	0.00	109.71	110.03	0.32
		Deployment 1	0.00	109.71	110.03	0.32
	8/9/2012	Initial Measurement	1	109.68	109.92	0.24
		Deployment 1	0.00	109.68	109.92	0.24
	8/23/2012	Initial Measurement	1	109.51	109.71	0.2
	9/6/2012	Initial Measurement	1	109.67	109.87	0.2
	9/21/2012	Initial Measurement	1	109.59	109.79	0.2
	10/8/2012	Initial Measurement	1	109.66	109.85	0.19
	10/22/2012	Initial Measurement	1	109.75	109.85	0.1
	2013	6/19/2013	Initial Measurement	N/A ^B	111.00	111.66
6/27/2013		Initial Measurement	N/A ^B	111.10	112.07	0.97
7/19/2013		Frozen	N/A ^B	NM	NM	NM
8/2/2013		Initial Measurement	N/A	111.22	111.94	0.72
8/14/2013		Initial Measurement	0.03	111.52	112.38	0.86
		Initial Measurement	0.01	111.62	112.50	0.88
		2" SoakEase (3 socks)	0.75	111.50	112.21	0.71
		2" SoakEase (4 socks)	0.75	111.55	112.02	0.47
		2" SoakEase (3 socks)	0.75	111.56	111.95	0.39
		2" SoakEase (3 socks)	0.75	111.58	111.85	0.27
		2" SoakEase (3 socks)	0.75	111.62	111.77	0.15
9/12/2013		2" SoakEase (2 socks)	0.50	111.60	111.71	0.11
		Initial Measurement	0.50	111.55	112.48	0.93
		2" SoakEase (3 socks)	0.75	111.57	112.33	0.76
		2" SoakEase (3 socks)	0.75	111.61	112.18	0.57
		2" SoakEase (3 socks)	0.75	111.64	112.01	0.37
		2" SoakEase (3 socks)	0.75	111.67	111.85	0.18
10/4/2013		2" SoakEase (3 socks)	0.75	111.72	111.81	0.09
		Initial Measurement	0.75	111.61	112.50	0.89
		4" SoakEase (2 socks)	1.50	111.76	112.22	0.46
		4" SoakEase (2 socks)	1.50	111.80	112.11	0.31
		4" SoakEase (2 socks)	1.50	111.75	112.00	0.25
		4" SoakEase (2 socks)	1.50	111.80	111.90	0.10
	4" SoakEase (2 socks)	1.50	111.90	111.92	0.02	
10/17/2013	Initial Measurement	0.75	111.66	112.40	0.74	
	4" SoakEase (1 sock)	0.75	111.74	112.36	0.62	
	2" SoakEase (3 socks)	0.75	111.79	112.19	0.40	
	2" SoakEase (3 socks)	0.75	111.85	112.05	0.20	
	2" SoakEase (2 socks)	0.34	111.80	111.95	0.15	
2014	5/8/2014	Initial Measurement	N/A	112.32	114.30	1.98
	6/3/2014	Initial Measurement	N/A ^B	112.48	114.43	1.95
	6/4/2014 ^D	Initial Measurement	N/A	112.48	114.45	1.97
		Submersible pump	3.49	112.41	113.35	0.94
		4" SoakEase (1 sock)	0.26	112.90	112.92	0.02
	6/5/2014 ^D	Final Measurement	N/A	112.59	113.24	0.65
7/9/2014	Initial Measurement	N/A ^B	112.61	114.67	2.06	

Table 3 - 1998-2024
 MW-5 Summary of Product Gauging and Recovery
 PS09 Mainline Turbine Sump

Year	Date	Description	Amount Recovered (gal)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
2014 Continued	7/28/2014	Initial Measurement	N/A	112.64	114.21	1.57
		3.33" Product bailer	2.25	112.95	113.52	0.57
		4" SoakEase (1 sock)	0.66	112.92	113.04	0.12
	8/7/2014	Initial Measurement	N/A	112.59	113.87	1.28
		3.33" Product bailer	1.90	112.75	113.04	0.29
		Initial Measurement	N/A	112.52	113.02	0.50
	8/26/2014	3.33" Product bailer	1.00	112.64	112.77	0.13
		4" SoakEase (1 sock)	0.10	112.68	112.70	0.02
		Initial Measurement	N/A	112.29	112.54	0.25
	9/23/2014	3.33" Product bailer	0.33	112.34	112.46	0.12
		4" SoakEase (1 sock)	0.07	112.43	112.44	0.01
		Initial Measurement	N/A	111.94	112.23	0.29
	10/9/2014	3.33" Product bailer	0.5	112.00	112.05	0.05
Initial Measurement		N/A	112.01	112.01	0.00	
4" SoakEase (2 socks)		0.25	112.02	112.03	0.01	
2015	6/4/2015	Initial Measurement	N/A ^b	111.04	111.70	0.66
	7/3/2015	Initial Measurement	N/A ^b	N/A	N/A	N/A
		4" SoakEase (1 sock)	0.16 ^c	N/A	N/A	N/A
	7/14/2015	Initial Measurement	N/A	111.31	112.44	1.13
	7/21/2015 ^d	Initial Measurement	N/A	111.41	112.31	0.90
		Submersible pump	1.9	111.62	111.70	0.08
	8/12/2015	Initial Measurement ^c	0.5	111.60	112.82	1.22
		3.33" Product bailer	2.1	111.71	112.05	0.34
	8/25/2015	Initial Measurement ^c	0.5	111.57	112.68	1.11
		3.33" Product bailer, 4" SoakEase	2.0	111.21	111.84	0.63
	9/13/2015	Initial Measurement ^c	N/A	111.58	112.98	1.40
		3.33" Product bailer, 4" SoakEase	2.1	111.90	112.33	0.43
	10/1/2015	Initial Measurement ^c	N/A	111.79	113.22	1.43
3.33" Product bailer, 4" SoakEase		4.25	112.11	112.18	0.07	
6/1/2016	Initial Measurement	N/A	111.46	112.20	0.74	
6/2/2016	Initial Measurement	N/A	111.50	112.43	0.93	
6/7/2016	Initial Measurement	N/A	111.58	113.06	1.48	
6/11/2016	Initial Measurement	N/A	111.60	112.85	1.25	
	1.66" bailer, 4" SoakEase (3 socks)	1.60	NM	NM	NM	
6/27/2016	Initial 4" SoakEase Recovery ^c	0.26	111.81	113.05	1.24	
	4" SoakEase (6 sock)	2.00	not recorded	not recorded	0.23	
7/10/2016	Initial 4" SoakEase Recovery ^c	0.26	111.89	113.00	1.11	
	3.33" bailer, 4" SoakEase	2.05	111.97	112.38	0.41	
8/5/2016	Initial 4" SoakEase Recovery ^c	0.26	111.97	112.93	0.96	
	3.33" bailer	2.20	NM	NM	NM	
8/18/2016	4" SoakEase (1 sock)	0.40	111.26	111.49	0.23	
	Initial 4" SoakEase Recovery ^c	0.40	112.12	113.09	0.97	
	3.33" bailer	1.50	NM	NM	NM	
9/5/2016	4" SoakEase (1 sock)	0.40	112.28	112.48	0.20	
	Initial 4" SoakEase Recovery ^c	0.40	112.10	112.62	0.52	
	4" SoakEase (1 sock)	0.40	NM	NM	NM	
9/16/2016	3.33" bailer	0.31	112.14	112.33	0.19	
	Initial Measurement	N/A	112.09	112.49	0.40	
	3.33" bailer	0.50	112.14	112.36	0.22	
10/3/2016	4" SoakEase (2 socks)	0.30	112.22	112.25	0.03	
	Initial Measurement	N/A	112.25	112.56	0.31	
	3.33" bailer	0.50	112.33	112.38	0.05	
10/13/2016	4" SoakEase (1 sock)	0.10	112.39	112.39	0.00	
	Initial Measurement	N/A	112.17	112.38	0.21	
	3.33" bailer	0.50	112.22	112.31	0.09	
	4" SoakEase (1 sock)	0.26	112.26	112.26	0.00	
5/25/2017	Frozen	N/A ^a	NM	NM	NM	
5/26/2017	Initial Measurement	N/A	112.72	113.83	1.11	
6/5/2017 to 6/7/2017	Initial Measurement	N/A	112.70	114.03	1.33	
	3.33" bailer	1.18	112.70	114.02	1.32	
	4" SoakEase (1 sock)	0.25	NM	NM	NM	
6/27/2017	4" SoakEase (1 sock)	0.25	112.89	113.22	0.33	
	Initial 4" SoakEase Recovery ^c	0.3	112.84	113.75	0.91	
	3.33" bailer	1.58	NM	NM	NM	
7/24/2017	4" SoakEase (2 socks)	1.50	113.08	113.12	0.04	
	Initial 4" SoakEase Recovery ^c	0.6	113.05	113.86	0.81	
	3.33" bailer	0.53	NM	NM	NM	
9/14/2017	4" SoakEase (1 sock)	0.56	113.67	113.83	0.16	
	Initial 4" SoakEase Recovery ^c	0.38	113.12	114.02	0.90	
	3.33" bailer	0.80	NM	NM	NM	
9/28/2017	4" SoakEase (1 sock)	0.56	113.24	113.29	0.05	
	Initial Measurement	N/A	112.93	113.38	0.45	
	3.33" bailer	0.53	NM	NM	NM	
10/19/2017	4" SoakEase (2 socks)	0.50	113.10	113.18	0.08	
	Initial 4" SoakEase Recovery ^c	0.25	113.05	113.48	0.43	
	3.33" bailer	0.38	113.12	113.25	0.13	
	4" SoakEase (1 sock)	0.06	113.14	113.16	0.02	
2018	6/2/2018 to 6/4/2018	Initial Measurement	N/A	113.28	114.80	1.52
		3.33" bailer	1.45	NM	NM	NM
		4" SoakEase (3 socks)	0.56	113.44	113.74	0.30

Table 3 - 1998-2024
 MW-5 Summary of Product Gauging and Recovery
 PS09 Mainline Turbine Sump

Year	Date	Description	Amount Recovered (gal)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
2018 Continued	6/8/2018	Initial 2" SoakEase Recovery ^C	0.38	113.49	114.29	0.80
		3.33" bailer	0.50	NM	NM	NM
	6/25/2018	4" SoakEase (6 socks)	0.93	113.55	113.63	0.08
		3.33" bailer	1.00	NM	NM	NM
	7/19/2018	4" SoakEase (4 socks)	0.50	NM	NM	NM
		Initial Measurement	N/A	113.33	114.15	0.82
		3.33" bailer	0.86	NM	NM	NM
	8/2/2018	4" SoakEase (4 socks)	0.68	113.55	113.63	0.08
		Initial Measurement	N/A	113.16	113.67	0.51
		3.33" bailer	0.80	NM	NM	NM
	8/16/2018	4" SoakEase (2 socks)	0.30	113.32	113.42	0.10
		Initial Measurement	N/A	113.21	113.71	0.50
		3.33" bailer	0.53	NM	NM	NM
	9/4/2018	4" SoakEase (4 socks)	0.55	113.36	113.42	0.06
		Initial Measurement	N/A	113.11	113.55	0.44
		3.33" bailer	0.46	NM	NM	NM
	9/18/2018	4" SoakEase (4 socks)	0.65	113.26	113.32	0.06
		Initial Measurement	N/A	112.98	113.16	0.18
		3.33" bailer	0.25	NM	NM	NM
	10/1/2018	4" SoakEase (2 socks)	0.25	113.04	113.05	0.01
Initial Measurement		N/A	112.72	112.85	0.13	
4" SoakEase (2 socks)		0.38	112.78	112.79	0.01	
2019	5/24/2019	Initial Measurement	N/A ^A	110.45	110.78	0.33
	5/31/2019	Well Thawing Trip	N/A ^B	NM ^B	NM ^B	NM ^B
	6/14/2019	Initial Measurement	N/A	110.46	110.78	0.32
		4" SoakEase (4 socks)	1.62	110.48	110.62	0.14
	6/28/2019	Initial Measurement	N/A	110.65	111.03	0.38
		4" SoakEase (8 socks)	4.56	110.74	110.82	0.08
	7/12/2019	Initial Measurement	N/A	110.64	111.02	0.38
		4" SoakEase (7 socks)	3.75	110.78	110.81	0.03
	7/31/2019	Initial Measurement	N/A	110.80	111.20	0.40
		4" SoakEase (7 socks)	2.85	110.95	110.96	0.01
	8/9/2019	Initial Measurement	N/A	110.92	111.28	0.36
		4" SoakEase (6 socks)	2.63	111.11	111.16	0.05
	8/30/2019	Initial Measurement	N/A	111.07	111.47	0.40
		4" SoakEase (6 socks)	2.91	111.20	111.24	0.04
	9/13/2019	Initial Measurement	N/A	110.89	111.15	0.26
		4" SoakEase (3 socks)	0.94	ND	111.04	0.00
	9/27/2019	Initial Measurement	N/A	111.15	111.60	0.45
4" SoakEase (4 socks)		2.03	111.39	111.42	0.03	
10/14/2019	Initial Measurement	N/A	110.84	111.03	0.19	
	4" SoakEase (2 socks)	0.71	110.90	110.93	0.03	
10/30/2019	Initial Measurement	N/A	110.62	110.75	0.13	
	4" SoakEase (2 socks)	0.56	ND	110.66	0.00	
2020	7/1/2020	Initial Measurement	N/A ^A	106.24	106.54	0.30
		Well Thawing Trip	N/A ^B	NM ^B	NM ^B	NM ^B
	7/29/2020	Initial Measurement	N/A	104.70	106.02	1.32
		4" SoakEase (6 socks)	3.69	104.91	104.92	0.01
	8/11/2020	Initial Measurement	N/A	104.42	105.10	0.68
		4" SoakEase (3 socks)	1.69	104.53	104.54	0.01
	8/24/2020	Initial Measurement	N/A	103.98	104.51	0.53
		4" SoakEase (3 socks)	1.73	ND	104.03	0.00
	9/15/2020	Initial Measurement	N/A	103.34	104.29	0.95
		4" SoakEase (3 socks)	1.50	103.50	103.51	0.01
	9/29/2020	Initial Measurement	N/A	103.83	104.41	0.58
		4" SoakEase (3 socks)	1.60	ND	103.97	0.00
	10/14/2020	Initial Measurement	N/A	103.59	104.23	0.64
4" SoakEase (3 socks)		1.20	ND	103.74	0.00	
11/11/2020	Initial Measurement	N/A	102.47	103.93	1.46	
	4" SoakEase (3 socks)	1.88	ND	102.73	0.00	
2021	6/15/2021	Initial Measurement	N/A	103.82	108.06	4.24
		3.33" Product bailer	5.00	NM	NM	NM
		4" SoakEase (5 socks)	2.25	104.55	104.57	0.02
	7/9/2021	Initial Measurement	N/A	104.20	107.58	3.38
		3.33" Product bailer	3.75	NM	NM	NM
		4" SoakEase (2 socks)	0.75	104.76	104.77	0.01
	7/21/2021	Initial Measurement	N/A	104.66	105.56	0.90
		4" SoakEase (2 socks)	0.75	ND	104.85	0.00
	8/12/2021	Initial Measurement	N/A	104.99	106.19	1.20
		4" SoakEase (4 socks)	1.69	ND	105.22	0.00
	8/26/2021	Initial Measurement	N/A	105.30	106.05	0.75
4" SoakEase (3 socks)		0.94	105.44	105.45	0.01	
10/1/2021	Initial Measurement	N/A	105.35	106.94	1.59	
	4" SoakEase (4 socks)	1.50	105.75	105.76	0.01	
2022	5/19/2022	Initial Measurement	N/A	108.70	108.83	0.13
		4" SoakEase (2 socks)	0.38	108.72	108.72	0.00
	6/7/2022	Initial Measurement	N/A	107.95	108.08	0.13
		4" SoakEase (2 socks)	0.38	107.95	107.96	0.01
	7/8/2022	Initial Measurement	N/A	106.48	107.90	1.42
4" SoakEase (5 socks)	2.25	106.78	106.79	0.01		

Table 3 - 1998-2024
 MW-5 Summary of Product Gauging and Recovery
 PS09 Mainline Turbine Sump

Year	Date	Description	Amount Recovered (gal)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
2022 Continued	7/26/2022	Initial Measurement	N/A	106.51	107.50	0.99
		4" Soakease (4 socks)	1.50	106.71	106.71	0.00
	8/16/2022	Initial Measurement	N/A	105.97	106.45	0.48
		4" Soakease (2 socks)	0.56	106.06	106.06	0.00
	8/25/2022	Initial Measurement	N/A	106.05	106.25	0.20
		4" Soakease (2 socks)	0.75	106.09	106.09	0.00
	9/8/2022	Initial Measurement	N/A	105.80	106.07	0.27
		4" Soakease (4 socks)	0.30	105.88	105.90	0.02
	9/20/2022	Initial Measurement	N/A	106.08	106.36	0.28
		4" Soakease (2 socks)	0.75	106.15	106.16	0.01
10/17/2022	Initial Measurement	N/A	105.81	106.32	0.51	
	4" Soakease (5 socks)	0.75	106.18	106.18	0.00	
2023	5/23/2023	Initial Measurement	N/A	108.30	108.38	0.08
		4" Soakease (2 socks)	0.08	108.31	108.32	0.01
	6/1/2023	Initial Measurement	N/A	108.25	108.38	0.13
		4" Soakease (2 socks)	0.30	108.27	108.30	0.03
	6/22/2023	Initial Measurement	N/A	108.04	108.11	0.07
		4" Soakease (3 socks)	0.08	108.06	108.12	0.06
	7/11/2023	Initial Measurement	N/A	107.95	108.10	0.15
		4" Soakease (4 socks)	0.90	107.96	107.99	0.03
	8/4/2023	Initial Measurement	N/A	107.79	107.97	0.18
		4" Soakease (4 socks)	0.90	107.85	107.87	0.02
	8/29/2023	Initial Measurement	N/A	107.54	107.94	0.40
		4" Soakease (5 socks)	1.50	107.65	107.67	0.02
9/23/2023	Initial Measurement	N/A	107.80	107.97	0.17	
	4" Soakease (3 socks)	0.75	107.85	107.86	0.01	
2024	5/28/2024	Initial Measurement	N/A	109.45	109.71	0.26
		2" Soakease (6 socks)	0.48	109.51	109.53	0.02
	6/14/2024	Initial Measurement	N/A	109.62	109.89	0.27
		2" Soakease (7 socks)	0.68	109.70	109.73	0.03
	6/27/2024	Initial Measurement	N/A	109.53	109.75	0.22
		2" Soakease (4 socks)	1.50	109.60	109.62	0.02
	7/11/2024	Initial Measurement	N/A	109.60	109.84	0.24
		2" Soakease (4 socks)	0.58	109.66	109.69	0.03
	8/7/2024	Initial Measurement	N/A	109.68	109.95	0.27
		2" Soakease (5 socks)	0.98	109.75	109.78	0.03
9/10/2024	Initial Measurement	N/A	109.88	110.18	0.30	
	2" Soakease (5 socks)	1.10	109.98	110.01	0.03	
Product Recovery Summary	Year		Gallons	Percent of 2011-2024 Total Recovered Volume		
	1998-2010 ^D		N/A	N/A		
	2011		6.7	5%		
	2012		6.0	4%		
	2013		20.1	15%		
	2014		10.8	8%		
	2015		13.5	10%		
	2016		14.6	11%		
	2017		10.1	7%		
	2018		11.0	8%		
	2019 (Adjusted) ^E		13.5	10%		
	2020 (Adjusted) ^E		8.0	6%		
	2021 (Adjusted) ^E		13.5	10%		
	2022 (Adjusted) ^E		4.6	3%		
2023 (Adjusted) ^E		2.7	2%			
2024 (Adjusted) ^E		3.2	2%			
Total 2011 to 2024		138.2	--			
Notes:						
0.01	BOLD values indicate the maximum measured product thickness for each year.					
A	Product recovery cannisters were operated for recovery of product during this period, recovery volumes were not noted for individual wells.					
B	Ice plug above product depth prevented canister or sock from being deployed for recovery.					
C	Product measurement following removal of sorbent sock.					
D	Product measurements during baildown test.					
E	Total volume of recovered product from visual assessment of 4" Soak Ease™ socks is corrected using correction factor of 0.60 based on results of wringing 4" socks in 2020.					
	Soak Ease™ 2" down-well socks absorb approximately 0.25 gallon of product each					
	Soak Ease™ 4" down-well socks absorb approximately 0.75 gallon of product each					
Abbreviations:						
ft	feet		N/A	not applicable	ND	non detect
gal	gallons		NM	not measured		

**Table 4 - 1998-2024 Annual Product Recovery Summary
PS09 Mainline Turbine Sump**

Product Recovery Summary	Period	Volume Recovered (gallons)	Percent of Total Recovered Volume ^A (gallons)	Number of Recovery Events	Recovery Volume per Event (gallons)
	1998-2010 ^B	1,085	86%	N/A	N/A
	2011 ^C	11.2	0.9%	4	2.8
	2012 ^D	8.7	0.7%	4	2.2
	2013 ^D	30.8	2.4%	4	7.7
	2014 ^{E, F}	16.2	1.3%	7	2.3
	2015 ^{E, F}	15.1	1.2%	5	3.0
	2016 ^{E, F}	17.8	1.4%	10	1.8
	2017 ^{E, F}	14.3	1.1%	6	2.4
	2018 ^{E, F}	17.0	1.3%	9	1.9
	2019 ^{G, H}	14.7	1.2%	11	1.3
	2020 ^{H, I}	9.4	0.7%	7	1.3
	2021 ^{E, H}	14.8	1.2%	6	2.5
	2022 ^{H, I}	4.9	0.4%	9	0.5
	2023 ^{H, I}	3.1	0.2%	7	0.4
	2024 ^{H, I}	3.2	0.3%	6	0.5
	Grand Total	1,266	100%	95	--

Notes:

- Not applicable
- A Total annual recovery for Monitoring wells MW-1, MW-5, and MW-6 1998 though 2016, monitoring wells MW-1 and MW-5 from 2017 to 2024.
- B Product recovery using oil skimmer pump and pneumatically-driven pumps for 1998 through 2009 and product bailers in 2010.
- C Product Recovery using Keck[®] Product Recovery Canisters as an active recovery system.
- D Product Recovery using bailers and Keck[®] Product Recovery Canisters as passive recovery systems.
- E Product recovery using Durham Geo Slope Indicator SoakEase[™] sorbent socks and product-selective bailers.
- F Total volume of recovered product is considered biased-high due to separate-phase water recovered with product using sorbent socks.
- G Product recovery using Durham Geo Slope Indicator SoakEase[™] and Pig[®] sorbent socks.
- H Product and water cut determined through wringing socks and measuring water/product volumes and weighing residual product in wrung socks. Correction factor applied to visually-determined volume.
- I Product recovery using only Durham Geo Slope Indicator SoakEase[™] sorbent socks.



Figures

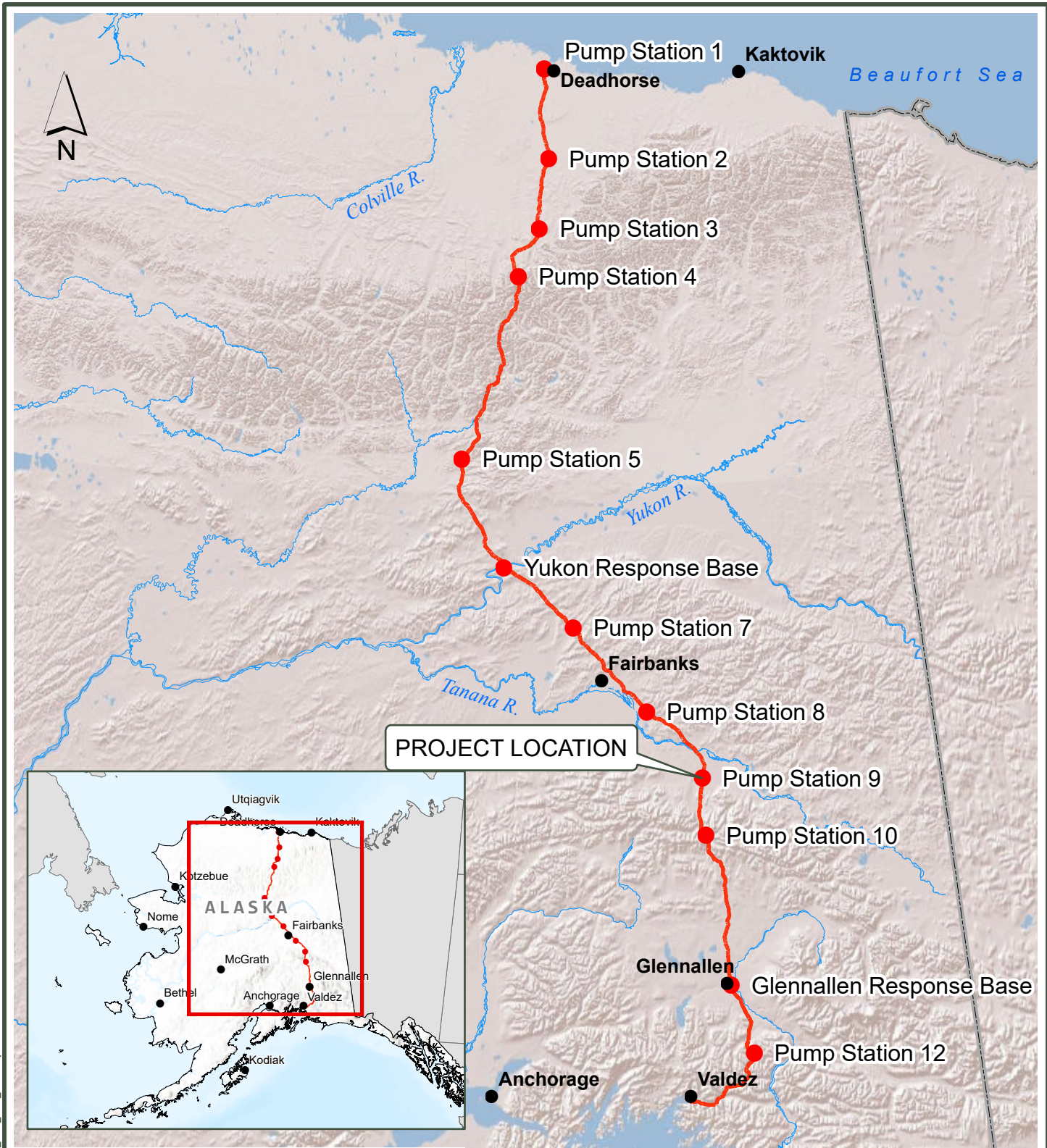
Pump Station 9 Mainline Turbine Sump

2024 Product Recovery Report

Alyeska Pipeline Service Company

ADEC File No: 330.38.065

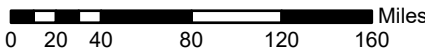
October 31, 2024



PROJECT LOCATION

Legend

- City
- Pump Station
- Trans-Alaska Pipeline System (TAPS)



THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

Site
 ALYESKA PIPELINE SERVICE COMPANY
 PUMP STATION 9
 PIPELINE MILEPOST 548.7

Project
 2024 PRODUCT RECOVERY REPORT,
 PUMP STATION 9 MAINLINE TURBINE SUMP

Drawing
 PROJECT LOCATION MAP

Date October 2024
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Scale As Shown
 Project No. 105.V01288.24018

Fig. No. 1

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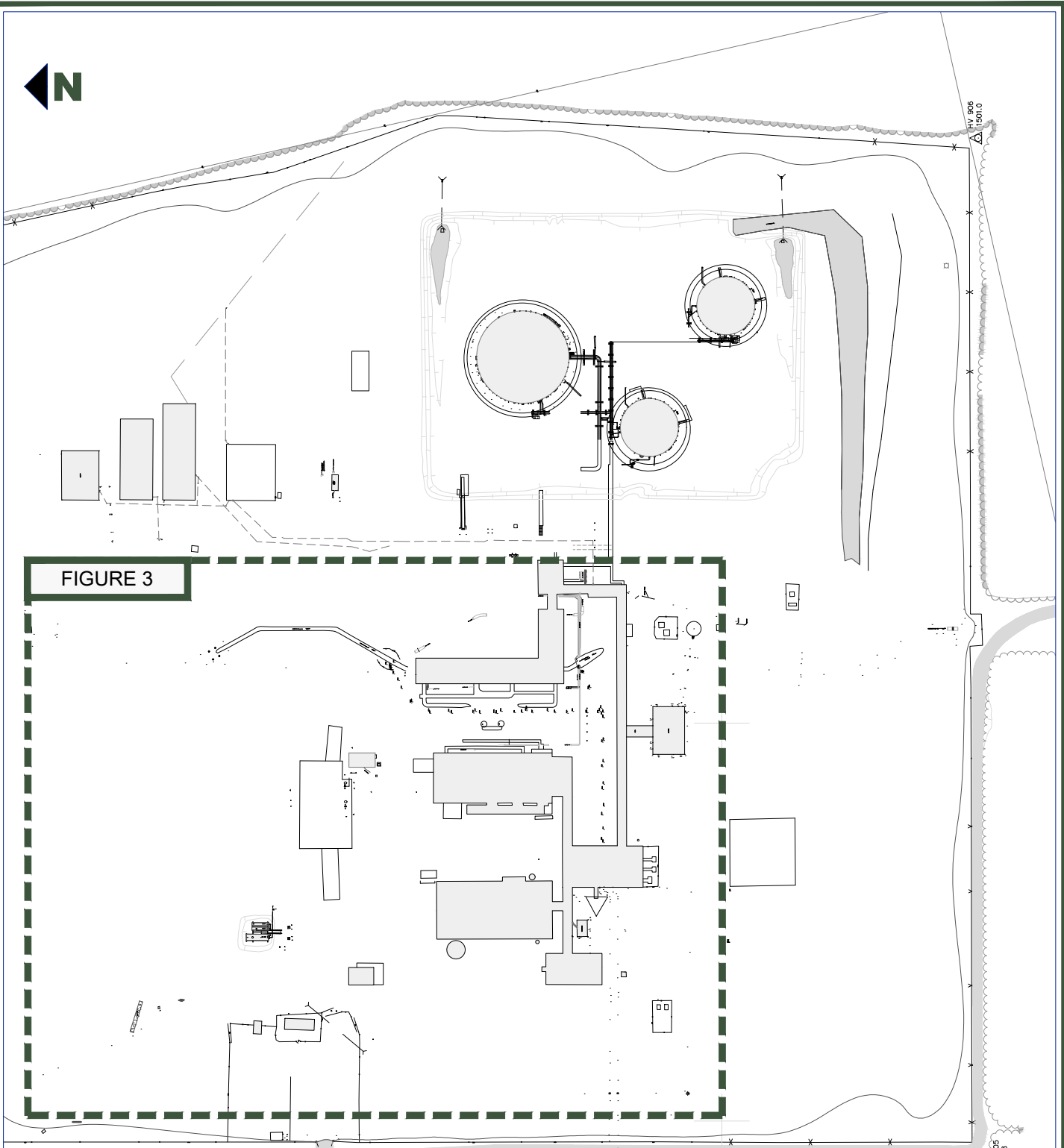


FIGURE 3

SCALE: 1" = 100 FEET
 WHEN PLOTTED AT 8.5 x 11 PAGE SIZE

0 100 200 300 FEET

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

Site
**ALYESKA PIPELINE SERVICE COMPANY
 PUMP STATION 9
 PIPELINE MILEPOST 548.7**

Report
**2024 PRODUCT RECOVERY REPORT,
 PUMP STATION 9 MAINLINE TURBINE SUMP**

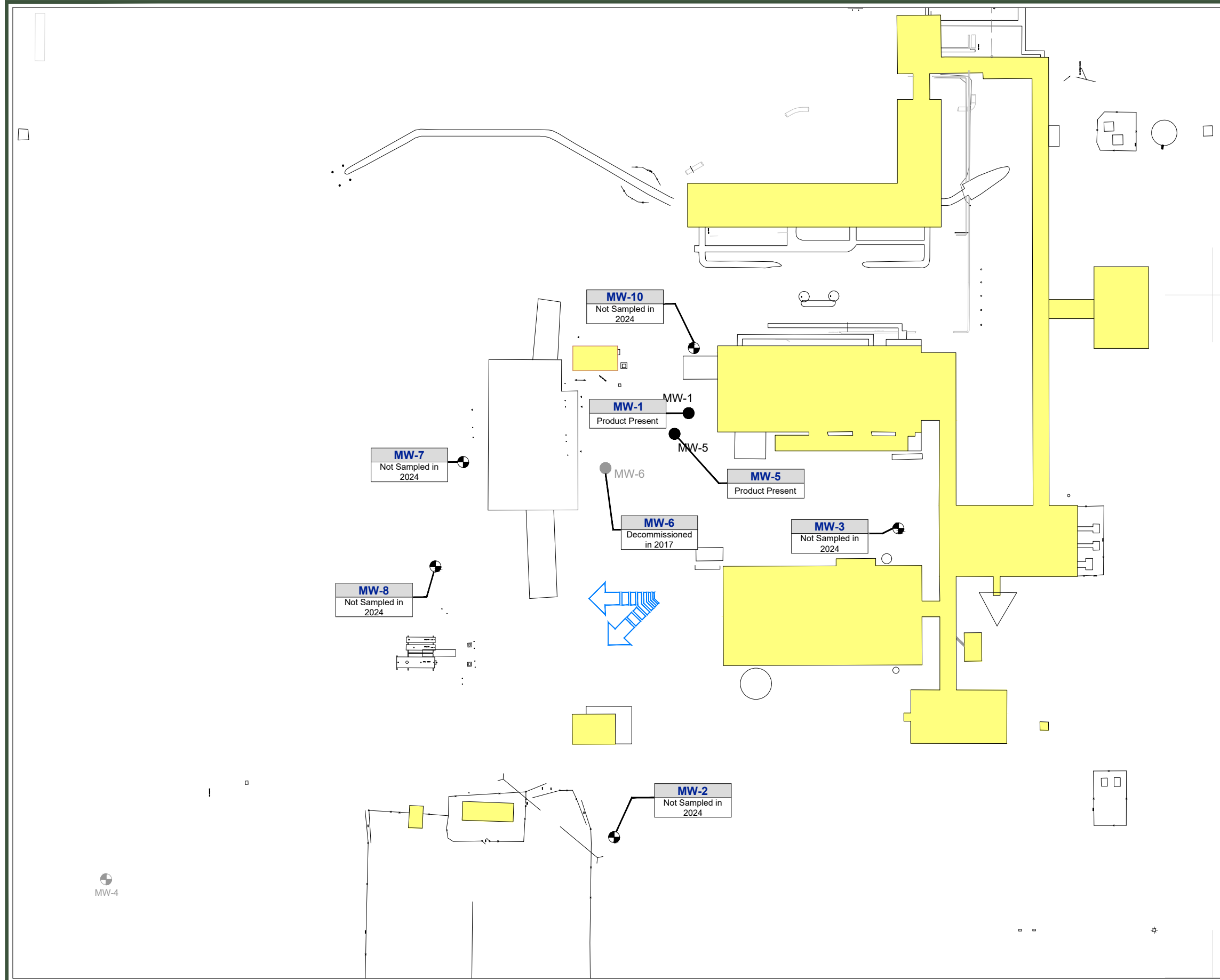
Drawing
SITE VICINITY MAP

Date October 2024
 File Name F2 APSC_PS09_MTS_RPT_24018

Scale 1" = 100 Feet
 Project No. 105.V01288.24018

Fig. No.
2





LEGEND

- MW-3 MONITORING WELL LOCATION
- MW-4 DESTROYED MONITORING WELL
- MW-1 RECOVERY WELL LOCATION
- MW-6 RECOVERY WELL (DECOMMISSIONED)
- APPARENT GROUNDWATER FLOW DIRECTION

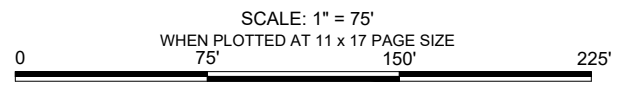
Site
**ALYESKA PIPELINE SERVICE COMPANY
 PUMP STATION 9
 PIPELINE MILEPOST 548.7**

Report
**2024 PRODUCT RECOVERY REPORT,
 PUMP STATION 9 MAINLINE TURBINE SUMP**

Drawing
**GROUNDWATER MONITORING WELL LOCATIONS
 AND ANALYTICAL RESULTS**

Date	October 2024	Scale	1" = 75 Feet	Fig. No.	3
File Name	F3 APSC_PS09_MTS_RPT_24018	Project No.	105.V01288.24018		

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.





Appendix A Photograph Log

Pump Station 9 Mainline Turbine Sump

2024 Product Recovery Report

Alyeska Pipeline Service Company

ADEC File No: 330.38.065

October 31, 2024

2024 PS09 Product Recovery Photolog

Photo 1: Heat traces connected to a generator to facilitate the thawing of ice plugs in monitoring wells MW-1 and MW-5 for initial 2024 visit (May 28, 2024)



Photo 2: Product recovery equipment set up at MW-5 (June 27, 2024)



Photo 3: Sorbent sock used to absorb product from MW-5 (June 27, 2024)





Appendix B Field Logbook

Pump Station 9 Mainline Turbine Sump

2024 Product Recovery Report

Alyeska Pipeline Service Company

ADEC File No: 330.38.065

October 31, 2024



26 5/28/24

PS09 Product Recovery C. Jennings

0800 Fill generator up with gas

0815 Pack car with equipment

0830 Complete Safety forms

0900 Depart Fairbanks to PS09

1050 Arrive at PS09

1100 Sign Permit

1105 Set up at monitoring wells

1115 Start generator to thaw MW-1

MW-5 DTP = 109.45

MW-5 DTW = 109.71

MW-1 DTP = 109.79

MW-1 DTW = 109.80

emulsion

1147 Deploy **6** socks in MW-5: $\frac{5}{10}, \frac{3}{10}, \frac{3}{10}, \frac{4}{10}, \frac{3}{10}, \frac{1}{10}$

Final DTP = 109.51

Final DTW = 109.53 = 0.02

Deploy **1** sock in MW-1: $\frac{0}{10}$

Final DTP = 109.80 = 0.00

Final DTW = 109.80

Note: MW-5 did not have ice

plug. Put both heat traces in MW-1

to thaw ice plug at 1.03 ft. while

deploying socks in MW-5.

1330 Dispose of oily waste

1340 Close out permit

1345 Depart PS09

1550 Arrive at Fairbanks

C. Jennings
5/28/24

6/14/24 PS09 Product Recovery C Jennings

0700 Depart Fairbanks

0923 Arrive at PS09

0930 Sign Permit

0935 Set up at monitoring wells

MW-5 DTP = 109.62 = 0.27

MW-5 DTW = 109.89

MW-1 DTP = 109.96 = 0.01

MW-1 DTW = 109.97

0945 Deploy 7 socks in MW-5: $\frac{7}{10}, \frac{5}{10}, \frac{5}{10}, \frac{5}{10}, \frac{2}{10}, \frac{2}{10}, \frac{1}{10}$

Final DTP = 109.70

Final DTW = 109.73 = 0.03 ^{emulsion}

1050 Deploy 1 sock in MW-1: 0/10

Final DTP = 109.97 = 0.00

Final DTW = 109.97

1105 Pack up equipment, dispose of oily waste

1125 Closeout permit

1135 Depart PS09

1350 Arrive in Fairbanks - a lot of construction going on

1430 Unload equipment at storage unit and end at Fairbanks office.

6/14/24 Cam Jennings

Red in the Rain

28 6/27/24 PS09 Product Recovery C. Jennings

0700 Pack truck, complete HSE forms

0730 Depart Fairbanks

0945 Arrive at PS09

0950 Check in with Leah, sign permit

0955 Set up at MW-1 and MW-5:

$$\text{MW-5 DTP} = 109.53 = 0.22$$

$$\text{MW-5 DTN} = 109.75$$

$$\text{MW-1 DTP} = 109.84 = 0.01$$

$$1015 \text{ MW-1 DTN} = 109.85$$

01 Deploy 4 socks in MW-5: $\frac{10}{10}, \frac{10}{10}, \frac{10}{10}, \frac{3}{10}$ ^{emulsion}

$$\text{Final DTP} = 109.60 = 0.02$$

$$\text{Final DTN} = 109.62$$

1120 Deploy 1 sock into MW-1: $\frac{0}{10}$

$$\text{Final DTP} = 109.85 = 0.00$$

$$\text{Final DTN} = 109.85$$

1135 Switch out old twine with new twine
and pack up equipment

1200 Check out with Bernard and

1240 close permit

~~1225~~ Depart PS09

1500 Arrive at storage unit and upack
and end at Fairbanks office

6/27/24 Caroline Jennings

7/11/24 PS09 Product Recovery P. Brown 29

0645 Depart lodging.

0700 Arrive SLR office. Load supplies.

0730 Arrive Blue Moose storage. Load supplies

0810 Depart storage Unit.

081020 Arrive PS09. Sign Permit.

1040 set up at MW-1.

1050. MW1: DTP DTW FD Socks

initial - ~~109.98~~ 109.98 0.0 —

no product detected at MW1.

1110 MW5: DTP DTW FD Socks

initial - 109.60 109.84 0.24 6/10

109.61 109.75 0.14 8/10 emulsion

109.62 109.73 0.11 5/10 emulsion

109.65 109.71 0.06 4/10 emulsion

Final - 109.66 109.69 0.03 —

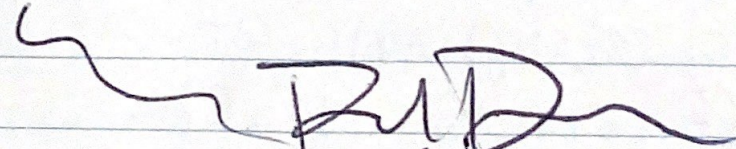
1205 Clean and pack up equipment.

1240 Drop oily waste, close permit, Depart PS09.

1450 Arrive Blue Moose Storage. Unload gear.

1520 Arrive SLR office.

1530 Depart SLR office. End field day.


P. Brown

7/11/24

30 8/7/24 PS09 Product Recovery C. Jennings

0700 Pack truck/car

0730 Complete Safety forms

0805 Pickup rental

0830 Depart Fairbanks

1040 Arrive at PS09

1050 Sign Permit, set up at wells

$$\text{MW-5 DTP} = 109.68 = 0.27 \text{ ft.}$$

$$\text{MW-5 DTW} = 109.95$$

$$\text{MW-1 DTP} = 110.00 = 0.0 \text{ ft}$$

$$\text{MW-1 DTW} = 110.00$$

1100 Deploy 5 socks in MW-5 (using both sides of sock)
10/10, 10/10 (emulsion), 10/10 (emulsion), 8/10, 1/10

$$\text{Final DTP} = 109.75 = 0.03$$

$$\text{Final DTW} = 109.78$$

1210 No product in MW-1!

Pack up equipment and dispose of oily waste.

1235 Sign Permit to Close out

1240 Depart PS09

1455 Arrive at storage unit and unload equipment

1520 Unload equipment at office

Drop off rental truck

W C. Jennings 8/7/24 W

9/10/24 PS09 Product Recovery C-Jenn³¹

0730 Gather equip and get keys
from office - Complete
Safety forms

0800 Pick up rental and pack
equip at storage unit

0850 Fill up tank and DEF Fuel

0900 Depart Fairbanks

1100 Arrive at PS09

1105 Sign Permit

1110 Set up at wells

$$\text{MW-5 DTP} = 109.88 = 0.30$$

$$\text{MW-5 DTW} = 110.18$$

$$\text{MW-1 DTP} = 110.20 = 0.0$$

$$\text{MW-1 DTW} = 110.20$$

1120 Deploy 5 socks in MW-5; using
both ends of socks:
 $\frac{10}{10}, \frac{10}{10}, \frac{10}{10}, \underbrace{\frac{9}{10}, \frac{5}{10}}_{\text{emulsion}}$

$$\text{Final DTP} = 109.98 = 0.03$$

$$\text{Final DTW} = 110.01$$

1215 No product in MW-1;
install heat trace in wells

1230 ~~Close~~ Close permit

1240 Depart PS09

1430 Arrive at PS08 (different proj.)

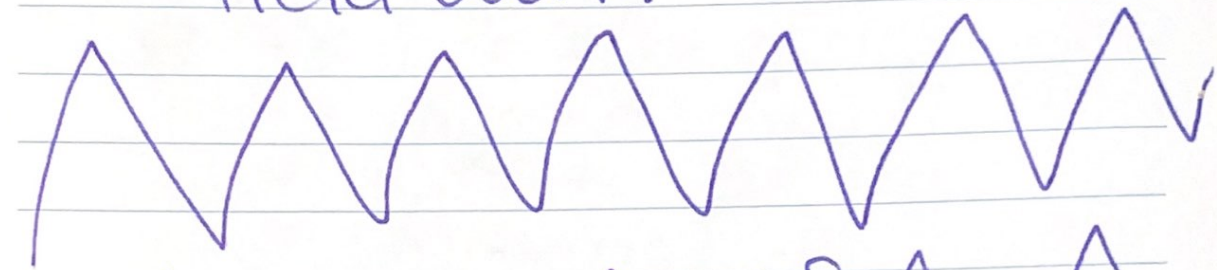
1500 Depart PS08

9/10/24 P509 Product Recovery C. Jennings

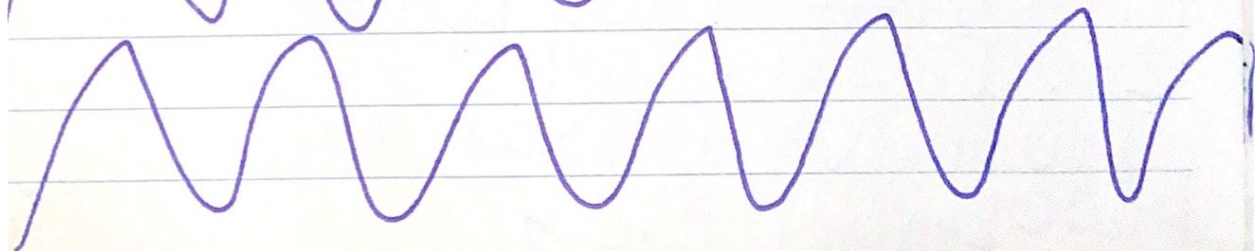
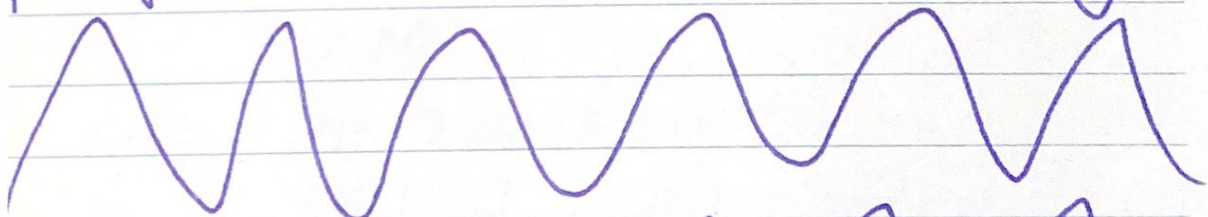
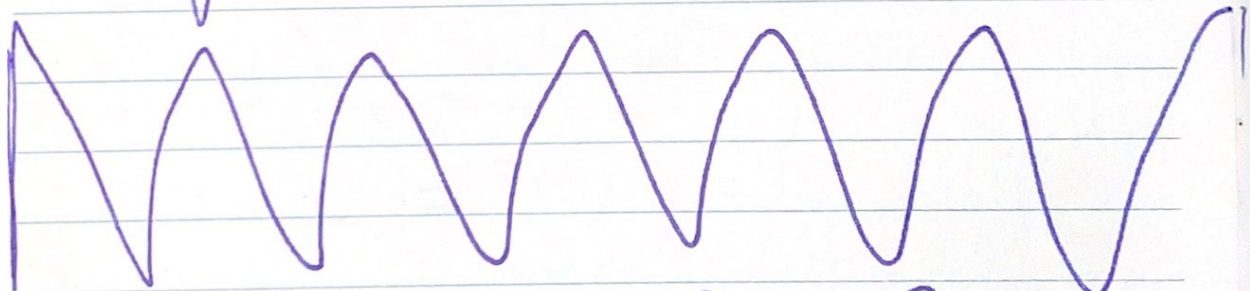
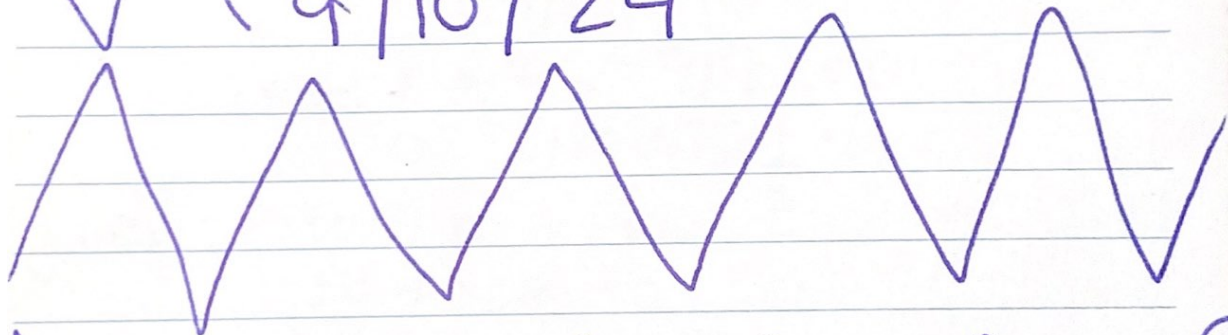
1600 Arrive at storage unit
and unload equipment

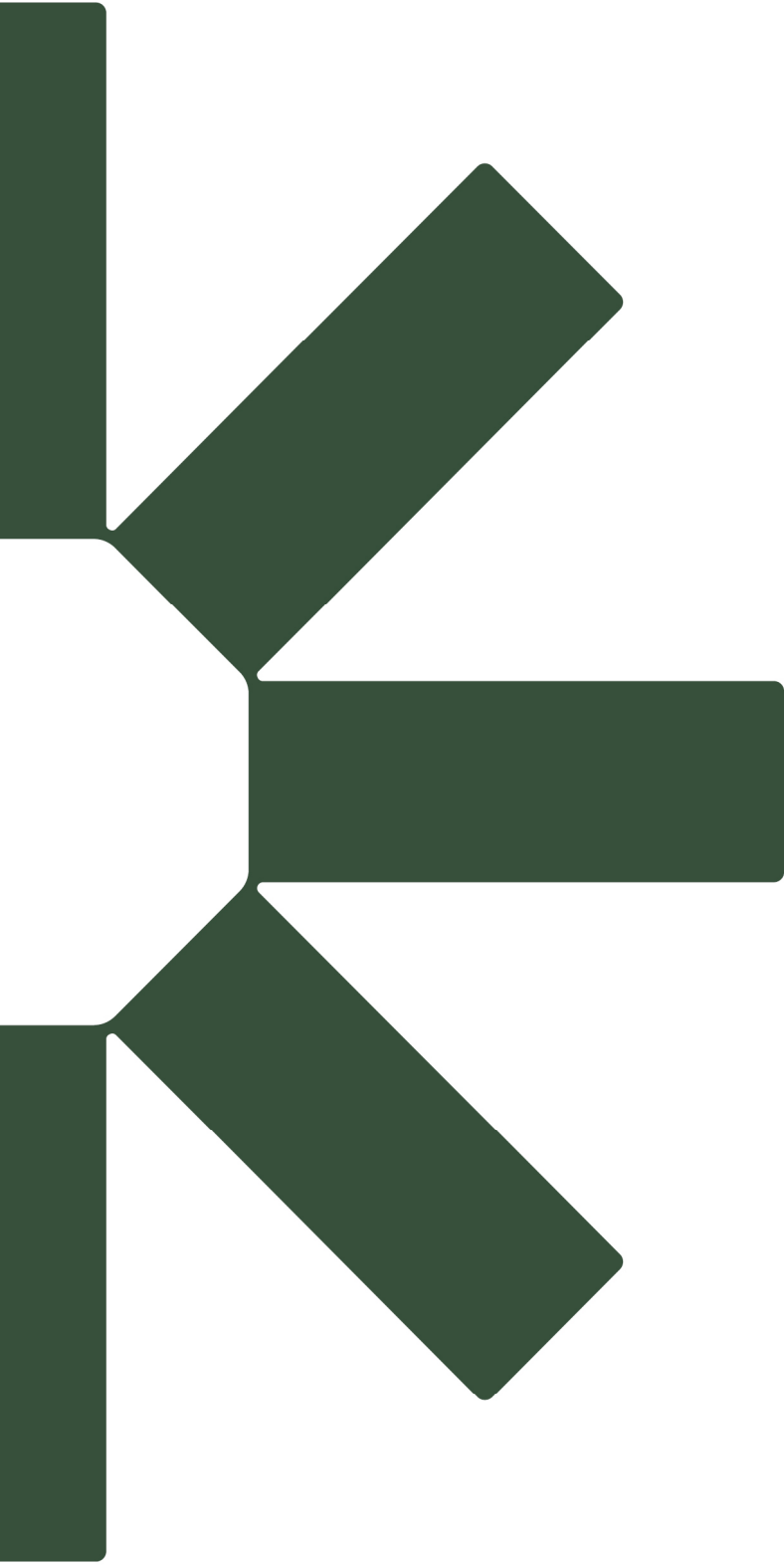
1630 Drop off rental truck

1720 Get uber to car and end
field work.



C. Jennings
9/10/24





Making Sustainability Happen