December 29, 2025

Mr. Rafi Alam
New York State Department of Environmental Conservation
Division of Environmental Remediation – Bureau B, Section D
625 Broadway
Albany, New York 12233

Re: Recovery Well RW-D Shutdown Request
ExxonMobil Greenpoint Petroleum Remediation Project (EMGPRP)
Brooklyn, New York

Dear Mr. Alam:

Roux Environmental Engineering and Geology, D.P.C. (Roux), for ExxonMobil Environmental and Property Solutions Company, on behalf of ExxonMobil Oil Corporation (collectively, ExxonMobil), is submitting this letter to request approval to shutdown recovery well RW-D, one of the recovery wells associated with the ExxonMobil Greenpoint Petroleum Remediation Project (EMGPRP). The EMGPRP includes the environmental investigation, monitoring, and remediation activities that ExxonMobil is performing within the project area (Site), as defined in the Consent Decree between the State of New York and ExxonMobil, filed on March 1, 2011, in the United States District Court, Eastern District of New York (Consent Decree). Recovery well RW-D satisfies all criteria outlined in the Recovery Well Shutdown Procedure, submitted as part of the Five-Year Recovery System Evaluation Report (5-YR RSER) that was approved with comments by the New York State Department of Environmental Conservation (NYSDEC) in correspondence dated August 13, 2018. This letter outlines the lines of evidence supporting the recommendation to permanently discontinue operation of recovery well RW-D as part of the EMGPRP, as well as the steps that have been, and will be taken, to ensure that hydraulic control will continue to be maintained at the Site in the absence of RW-D.

Background

The Site is divided into eight, geographically based, operable units (OUs) to address varying conditions and remediation requirements as appropriate for each OU. Of those eight OUs, free-phase petroleum product (free-product) recovery is actively occurring in four areas, including OU-4, OU-5, OU-7, and OU-8. ExxonMobil currently operates and maintains 19 dual-pump, liquid extraction (DPLE) recovery wells at the Site, which use groundwater extraction to enhance the recovery of free-product from beneath the project area. The groundwater extracted from each recovery well is conveyed to one of two groundwater treatment systems that ExxonMobil operates for the EMGPRP, including the Former Brooklyn Terminal Recovery and Containment System (RCS), located at 400 Kingsland Avenue, Brooklyn, New York, and the Off-Site Free-Product Recovery System (ORS) located at 5 Bridgewater Street, Brooklyn, New York. Of the 19 active DPLE recovery wells, seven are located in OU-4 / OU-5, and twelve are located in OU-7 / OU-8. A description of the EMGPRP recovery operations is provided in Quarterly and Annual Progress Reports submitted to the NYSDEC. Figure 1 shows the approximate locations of the RCS and ORS treatment facilities and recovery wells that are part of the overall EMGPRP.

Recovery well RW-D is located in OU-7 on a property owned by a third-party at 5 Bridgewater Street, Brooklyn, New York. Free-product recovery and groundwater extraction operations are controlled locally at the well location and groundwater treatment operations, as well as overall run control for RW-D, are provided by the ORS groundwater treatment facility. Recovery well RW-D was constructed with a 10-inch

209 Shafter Street ■ Islandia, New York 11749 ■ +1.631.232.2600 ■ www.rouxinc.com
California ■ Illinois ■ Massachusetts ■ New Jersey ■ New York ■ Texas ■ Virginia

diameter well, utilizing a section of stainless-steel casing and a section of 40-slot and 10-slot, continuously wrapped V-shaped (V-wire) stainless-steel screen. The groundwater extraction well is approximately 65 feet deep, with the 40-slot screened interval between 19 feet below land surface (ft-bls) and 49 ft-bls, the 10-slot screen between 49 ft-bls and 64 ft-bls, and a stainless-steel plug from 64 ft-bls to 65 ft-bls. The recovery well is equipped with a 5-horsepower (5-hp) groundwater extraction pump and a 1/3-hp product pump. The annular space around the groundwater extraction well screen was packed with #2 Morie gravel from approximately five feet above the top of the screened interval to 49 ft-bls, #00N gravel was placed from 49 ft-bls to 69 ft-bls, and the remaining annular space from the top of the gravel pack to the bottom of the recovery well vault was sealed with bentonite and grout. The top of the well is approximately 3 ft-bls and a concrete vault protecting the recovery well was installed around the well to provide access and protection. Groundwater extracted from RW-D is conveyed to the ORS for treatment and discharge. Free-product recovered from RW-D is pumped to one of two, 4,000-gallon underground storage tanks (USTs) located at 5 Bridgewater Street, Brooklyn, New York.

Recovery well RW-D was installed in 1995, began DPLE recovery operation in 1995, and has recovered a total of approximately 1,290,854 gallons of free product since start-up through October 2025. In the Third Quarter of 2025, the groundwater extraction rate at RW-D averaged approximately 24 gallons per minute (gpm), and RW-D extracted 2,772,558 gallons of groundwater during that time. The monthly average free-product recovery rate trend for RW-D from the first full month of operation after startup in 1995 through Third Quarter of 2025 is shown on Figure 2. The maximum average monthly free-product recovery rate for recovery well RW-D occurred in April 1998 and was approximately 951 gallons per day (gpd). The average monthly free-product recovery rate from 2018 through 2020 was less than 1 gallon per day. No free-product has been recovered from recovery well RW-D since 2021.

Recovery Well Shutdown Procedure

As the EMGPRP continues to recover free-product, recovery rates likely will continue to decline over time due to the self-limiting nature of the free-product recovery process. The status of the overall decline of free-product recovery for the RCS and ORS systems, despite continued efforts of significant groundwater extraction, is shown by the large ratios of groundwater recovery to free-product recovery.

An evaluation was performed for recovery well RW-D utilizing data from start-up through October 2025. The following elements were evaluated, as outlined in the Recovery Well Shutdown Procedure (Attachment 1), to determine the applicability of decommissioning RW-D:

1. Do recovery trends indicate that RW-D is approaching endpoint?
    a. Has RW-D O&M documentation shown 90% or above operational status?
    b. Is the RW-D recovery rate below 3 gallons per day?
    c. Is the RW-D recovery rate below 5% of the historical peak recovery rate?
    d. Is the RW-D annual recovery below 1% of the historical recovery total?
2. Is LNAPL transmissivity at RW-D below 0.8 ft^2/day?
3. Is RW-D operation required for hydraulic control?

These elements are discussed in greater detail in the sections below.

Element 1 – Free-Product Recovery Endpoint

As documented in Figure 2, the free-product recovery rate from RW-D reached a high of approximately 951 gpd in April 1998, with a total annual recovery of 246,395 gallons in 1998. Since 1998 the free-product recovery has continued to decrease, with a total of 947 gallons recovered from 2015 to 2020 and 0 gallons recovered from 2021 to present. Operations personnel regularly adjust pump settings

and groundwater pumping rates in an effort to optimize recovery which has increased recovery in the short term; however, in the long-term, these adjustments cannot counteract the overall decrease in free-product recovery that is occurring due to decreases in free-product mobility as free-product is recovered from the subsurface. The average monthly free-product recovery rate from 2018 through 2020 was less than 1 gallon per day. No free-product has been recovered from recovery well RW-D since 2021.

The operational data for RW-D through the end of October 2025 indicate that all criteria for Element 1 outlined in the Recovery Well Shutdown Procedure have been satisfied. O&M documentation has demonstrated that RW-D maintained an average run time of 92.2% for a six-month period prior to evaluation for shutdown. The recovery well has been well-maintained to demonstrate that decreased free-product recovery is a result of the self-limiting nature of the free-product recovery process, and not due to improper operation and maintenance. During the most recent three-month recovery rate evaluation period (i.e., Third Quarter of 2025), the recovery rate was 0.0 gpd, which is less than both recovery rate targets identified in the Recovery Well Shutdown Procedure (i.e., less than 3 gpd average recovery rate and less than 5% of the historical peak recovery rate of 951 gpd). In addition, in 2024, there was no recorded recovery at RW-D, so the annual recovery volume at RW-D is less than 1% of the historical recovery total of 1,290,854 gallons of free-product for RW-D.

Element 2 – LNAPL Transmissivity

In addition to recovery rates, as part of the on-going assessment of free-product mobility and recovery well operational performance throughout the Site, Roux continues to evaluate light non-aqueous phase liquid (LNAPL) transmissivity on a monthly basis using recovery well operational data. The recovery wells are operated continuously 24 hours per day and seven days per week. LNAPL recovery rates and groundwater recovery rates are collected continuously and logged by the Supervisory Control and Data Acquisition (SCADA) system that is used in an effort to control the recovery systems and provides a robust dataset for transmissivity calculations. These data show a decrease in LNAPL transmissivity that is consistent with the decrease in free-product recovery. The LNAPL transmissivity trend for RW-D was plotted on Figure 3 in an effort to evaluate LNAPL mobility [as compared to the guidance values provided by the Interstate Technology and Regulatory Council (ITRC) (i.e., 0.1 to 0.8 ft^2/day)]. As shown in Figure 3, RW-D has not had sufficient product thickness to evaluate LNAPL transmissivity since May 2017. In May 2017 RW-D had a transmissivity of less than 0.08 ft^2/day, a value for which the ITRC suggests that the mobility of free-product present in the vicinity of the well is very low and that the remaining free-product, if any, exists primarily at residual saturation. This, in addition to the metrics discussed above, suggests that the recovery well is unlikely to recover appreciable amounts of free product if it continues to operate.

Element 3 – Hydraulic Control

As noted above, RW-D is one of 12 recovery wells operating in the OU-7 / OU-8 area of the Site. In order to evaluate the potential groundwater effect of shutting down RW-D, Roux utilized the latest groundwater model for the Site. The details regarding the development of this model were provided in the EMGPRP 2024 Groundwater Modeling Activities Letter Report (Modeling Report), dated April 12, 2024, previously submitted to NYSDEC. In the "Reduction of Seven Recovery Wells Simulation" discussed in the Modeling Report, a transient model was simulated for a time period between 2007 and 2047, with a removal of nine recovery wells (RW-D RW-E, RW-K, RW-16, RW-22, RW-23, RW-27, RW-28, and RW-29) and the addition of up to two new recovery wells (RW-16R and RW-30) between January 2021 and April 2027. It should be noted that RW-30 would only be installed if it is determined that it is needed to continue to maintain hydraulic control along the OU-4 perimeter of the Site. RW-D was included in this simulation, based on the evaluation of recovery operations at the time the current model was developed, and consideration of the recovery well shutdown flow chart. Pumping rates in the model simulation were increased at other recovery wells as the nine wells were removed and two wells were added over time. Particle tracking for the nine well removal and two new recovery well addition scenario was conducted

in an effort to evaluate future groundwater flow paths predicted by the model simulation and evaluate potential hydraulic control. The modeling results indicate that without RW-D (and the eight other recovery wells identified above) and with the addition of the two new recovery wells, hydraulic control can still be maintained by slightly adjusting the flow rates of surrounding recovery wells. Figure 4 shows groundwater modeling results and particle tracking for the abovementioned pumping scenario without recovery well RW-D in operation. As shown, the results indicate that hydraulic control will be maintained if RW-D is decommissioned. Once the well is shutdown, Roux will continue to collect quarterly Site-wide fluid-level measurements to verify that hydraulic control is maintained. The results of future evaluation activities, including groundwater elevation data, will be included in future Quarterly and Annual Progress Reports.

Green Remediation Considerations

In line with NYSDEC DER-31 and ExxonMobil's ongoing focus on adhering to sustainable remediation approaches, the shutdown of RW-D will further decrease the carbon footprint of the EMGPRP. An energy expenditure analysis was performed specific to the Recovery Well Shutdown Procedure flowchart to evaluate the energy savings resulting from discontinuing operation of RW-D based on 2025 operational parameters. As part of this analysis, the energy expenditure for the operation of the recovery well was converted into an equivalent volume of gasoline needed to produce this amount of energy. This equivalent volume of gasoline was then used to calculate the atmospheric contamination rate attributable to the operation of the recovery well, which represents the rate of CO_2 emissions that would be prevented by shutting down the recovery well. The conversion factors utilized are from the EPA Greenhouse Gases Equivalencies Calculator. [1]

The power supply to recovery well RW-D comes from the ORS treatment facility, therefore, the facility and RW-D share a common electric meter, so the available power supply records cannot be used to directly evaluate the carbon footprint of recovery well RW-D operations. As an alternative, the energy use at RW-C, a neighboring recovery well that is comparable in operation to RW-D, was evaluated to determine energy savings resulting from shutting down RW-D. The estimated 2025 energy usage of RW-C from November 2024 to October 2025 was approximately 39,388 kilowatt hours (kWh). Based on this 12-month period, the equivalent volume of gasoline consumed to operate RW-C every year, and by extension, RW-D, is approximately 1,876 gallons. This energy consumption represents an annual carbon footprint of approximately 16.7 metric tons of CO2 per year based on the 2024 through 2025 operation data. Therefore, the shutdown of RW-D would eliminate the use of approximately 39,000 kWh of energy, and, in turn, eliminate the subsequent creation of approximately 16.5 metric tons of CO2 per year.

Request for Approval to Shutdown Recovery Well RW-D

Based upon the information presented above, RW-D satisfies all criteria specified within the Site-specific Recovery Well Shutdown Procedure. Therefore, Roux, on behalf of ExxonMobil, requests NYSDEC approval to permanently shut down recovery well RW-D.

Following NYSDEC's approval to permanently shut down recovery well RW-D, ExxonMobil will permanently decommission and disconnect recovery well RW-D from the EMGPRP recovery system network, in accordance with NYSDEC well decommissioning procedures outlined in NYSDEC Policy CP-43. The steel casing will be removed to a depth of approximately 5-feet below grade, and the remaining well casing will be grouted and capped. The well vault will be decommissioned in coordination with the property owner. The two 4,000-gallon (USTs) located at 5 Bridgewater Street, Brooklyn, New York, that are utilized to store free-product, will be proposed to be abandoned in place due to the proximity of the tanks to the ORS treatment facility buildings once they are no longer needed

[1] United States Environmental Protection Agency Greenhouse Gas Equivalency Calculator: https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

for ORS / EMGPRP operations. Tank abandonment will be discussed with Region 2 NYSDEC Petroleum Bulk Storage prior to commencement.

Should you have any questions, please do not hesitate to contact us.

Sincerely,

ROUX ENVIRONMENTAL ENGINEERING AND GEOLOGY, D.P.C.

Jacqueline Carames
Project Geologist

Andrew Baris, PG
Principal Hydrogeologist/
Executive Vice President

Attachments:

- Figure 1 – EMGPRP Free-Product Recovery System
- Figure 2 – RW-D Monthly Average Free-Product Recovery Rate Summary – 1995 to 2025
- Figure 3 – Estimated LNAPL Transmissivity – RW-D
- Figure 4 – Particle Traces Under Future Hypothetical Pumping Rates
- Attachment 1 – Recovery Well Shutdown Procedure

cc: Laura Mirman-Heslin, Esq., New York State Office of the Attorney General , Esq., New York State Office of the Attorney General
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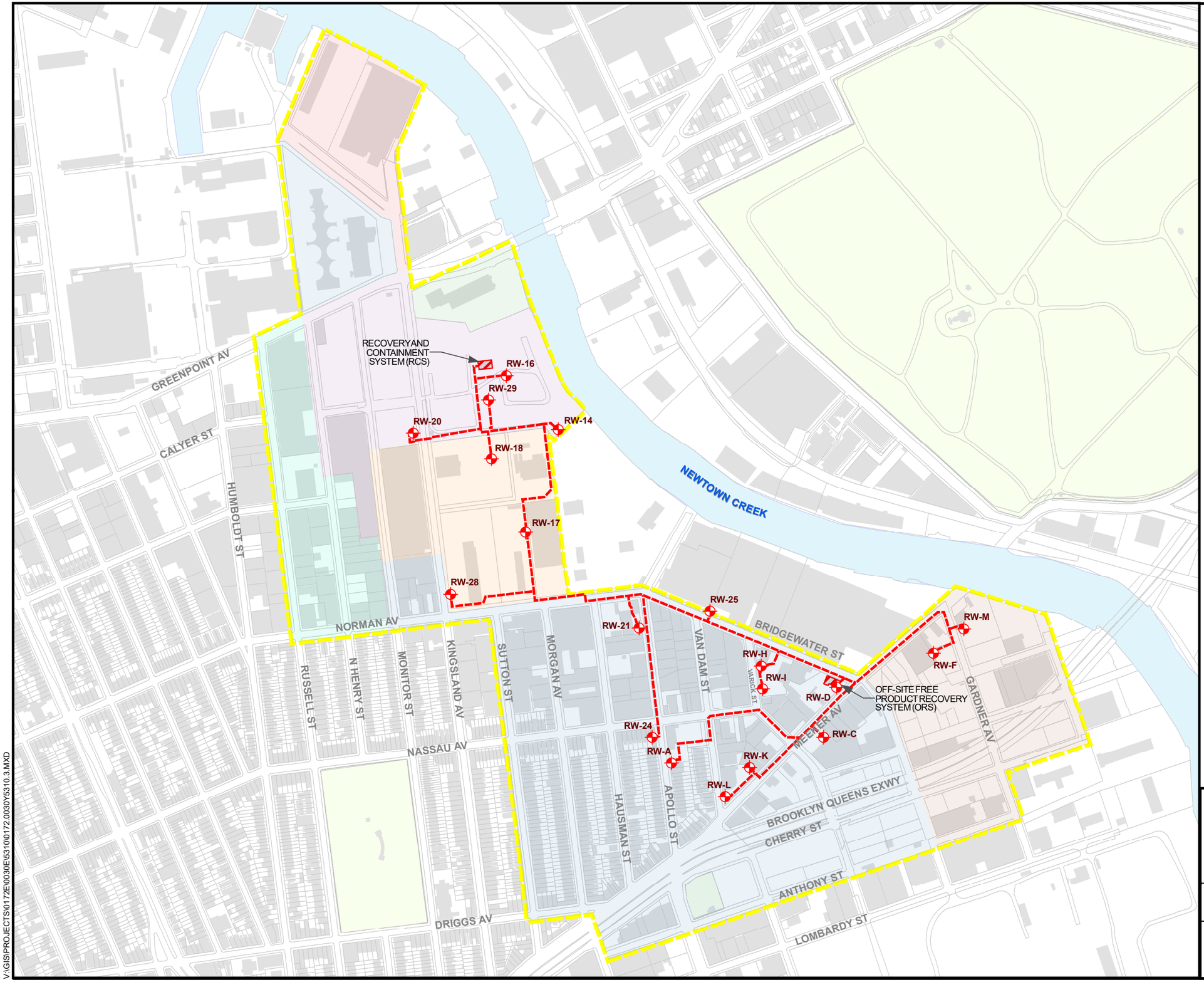
Michael Murphy, NYSDEC
Lisa Gorton, P.E., NYSDEC
Heidi Dudek, NYSDEC
Todd Ommen, Esq., Pace University School of Law
Richard Webster, Riverkeeper
Mike Dulong, Riverkeeper
Michael J. Burghardt, ExxonMobil
John Lee, ExxonMobil
Rene Gonzalez, ExxonMobil
Christopher Proce, Roux Environmental Engineering & Geology, D.P.C.

FIGURES



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LEGEND

- RW-24 ACTIVE DUAL-PUMP RECOVERY WELL LOCATION AND DESIGNATION
- GROUNDWATER REMEDIATION SYSTEM PIPING
- TREATMENT SYSTEM LOCATION
- EMGPRP SITE BOUNDARY

500 0 500'

Title:

EMGPRP FREE-PRODUCT RECOVERY SYSTEM

EXXONMOBIL
GREENPOINT PETROLEUM REMEDIATION PROJECT
GREENPOINT, BROOKLYN, NEW YORK

Prepared for:
EXXONMOBIL OIL CORPORATION
BROOKLYN, NEW YORK

ROUX

Compiled by: N.B.	Date: 10/09/25	FIGURE
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Figure 2. RW-D Monthly Average Free-Product Recovery Rate Summary - 1995 to 2025
ExxonMobil Greenpoint Petroleum Remediation Project, Greenpoint, Brooklyn, New York

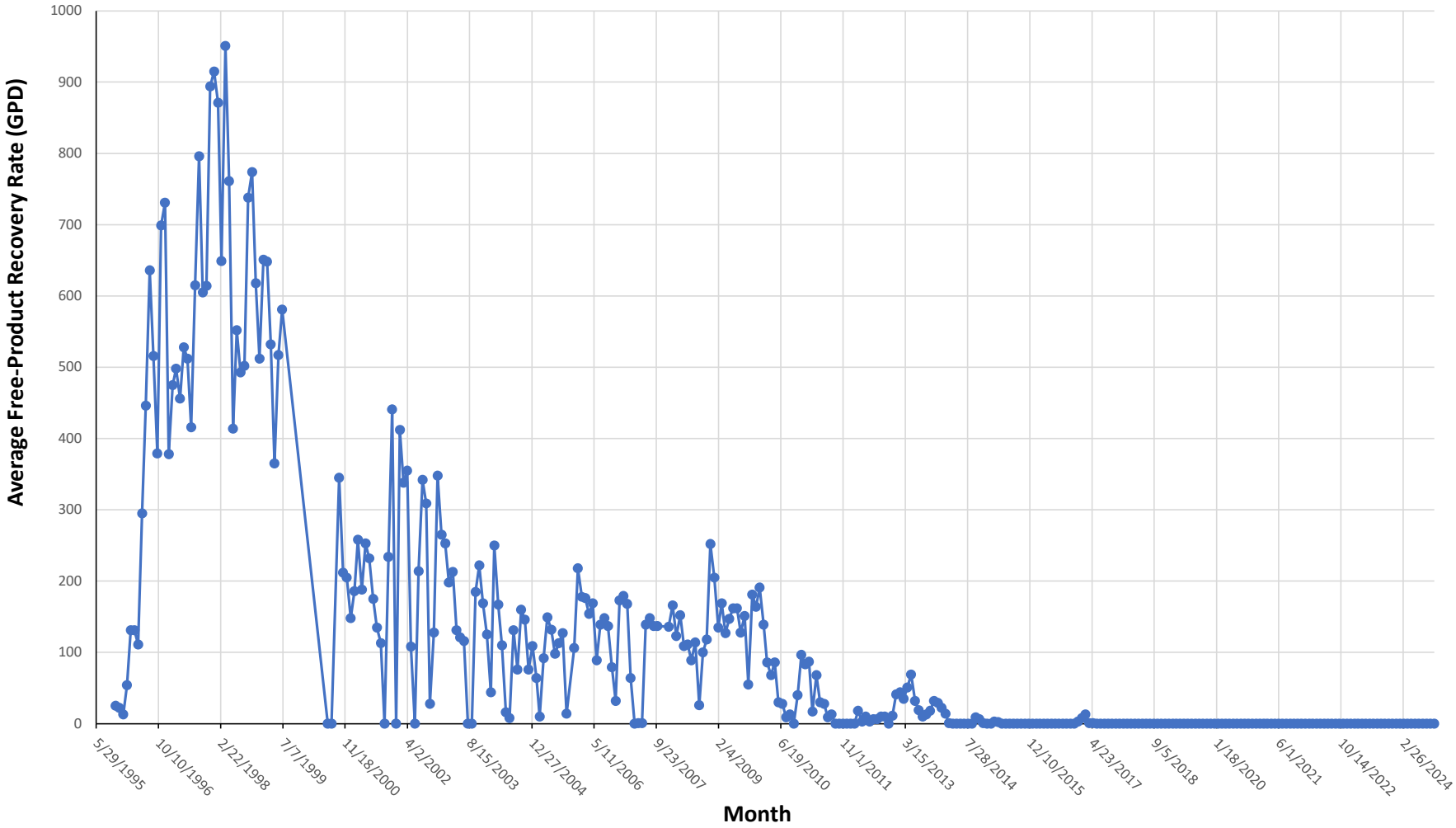
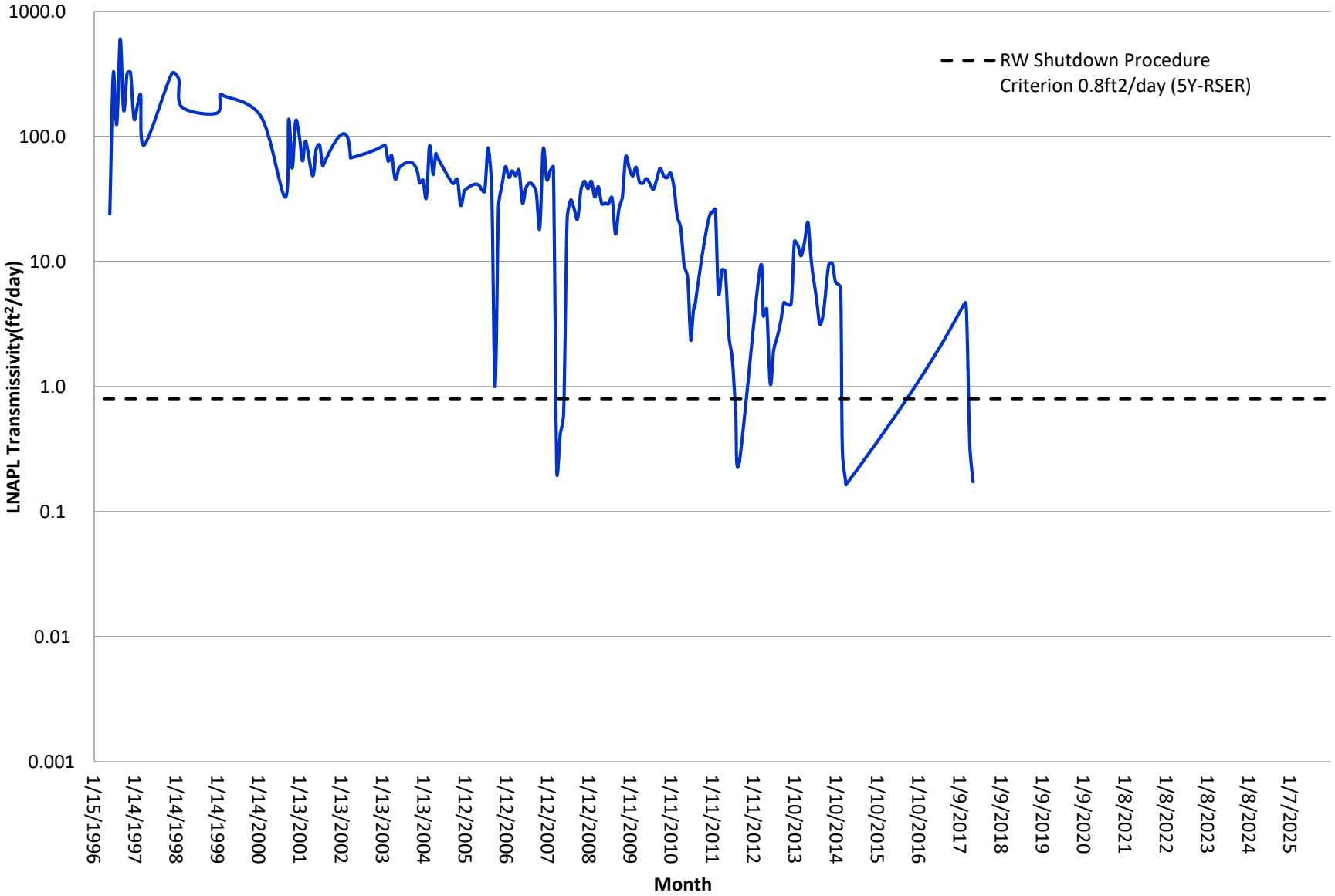
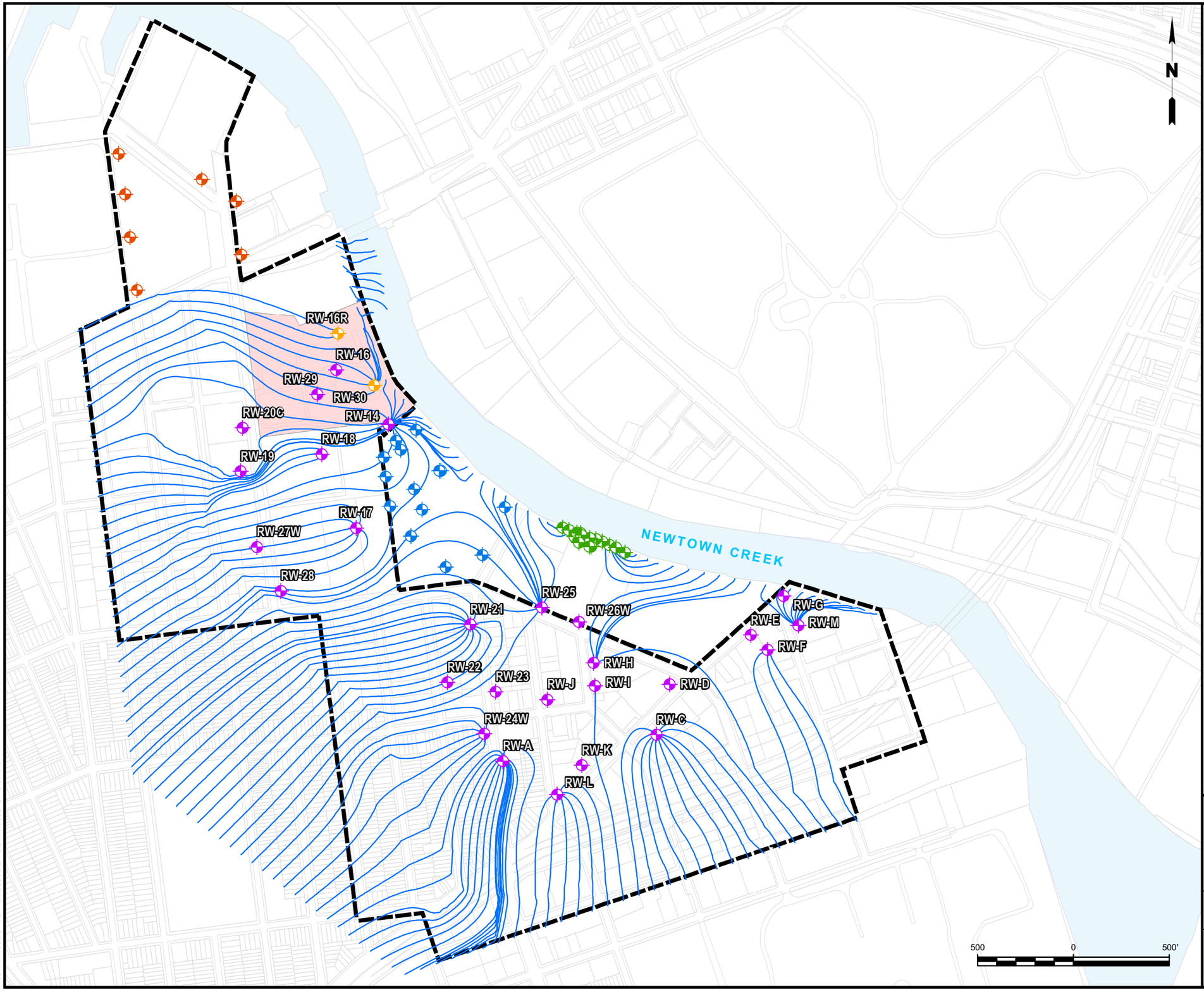


Figure 3. ESTIMATED LNAPL TRANSMISSIVITY - RW-D

ExxonMobil Greenpoint Petroleum Remediation Project, Greenpoint, Brooklyn, New York





LEGEND

- LOCATION OF PUMPING WELL OWNED AND OPERATED BY EXXONMOBIL
- LOCATION OF POTENTIAL NEW RECOVERY WELL OWNED AND OPERATED BY EXXONMOBIL
- LOCATION OF PUMPING WELL OWNED AND OPERATED BY CHEVRON
- LOCATION OF PUMPING WELL OWNED AND OPERATED BY KINDER MORGAN
- LOCATION OF PUMPING WELL OWNED AND OPERATED BY NYCDEP
- MODELED GROUNDWATER PARTICLE TRACES
- APPROXIMATE EXTENT OF KINGSLAND YARD
- EMGPRP SITE BOUNDARY

Recovery Well	GPM
RW-14	50
RW-16	0
RW-16R	15
RW-17	65
RW-18	15
RW-19	0
RW-20	5
RW-21	70
RW-22	0
RW-23	0
RW-24	30
RW-25	50
RW-26	0
RW-27	0
RW-28	0
RW-29	0
RW-30	15
RW-A	30
RW-C	60
RW-D	0
RW-E	0
RW-F	50
RW-G	0
RW-H	50
RW-I	40
RW-J	0
RW-K	0
RW-L	45
RW-M	10

TOTAL COMBINED FLOW	600

NOTES

Potential reduction of nine recovery wells and one new recovery well simulated between 2007 and 2047

January 2021:	RW-E Off
February 2022:	RW-22 Off
April 2023:	RW-27 Off
April 2024:	RW-23 Off
April 2025:	RW-D, RW-16 AND RW-29 Off; RW-16R AND RW-30 On
April 2026:	RW-28 Off
April 2027:	RW-K Off

Title:

PARTICLE TRACES UNDER FUTURE HYPOTHETICAL PUMPING RATES

GREENPOINT PETROLEUM REMEDIATION PROJECT
GREENPOINT, BROOKLYN, NEW YORK

Prepared for:
EXXONMOBIL OIL CORPORATION
BROOKLYN, NEW YORK

ROUX

Compiled by: J.C.	Date: 03/28/24	FIGURE
Prepared by: M.S.R.	Scale: AS SHOWN	4
Project Mgr: C.L.	Project: 0172.0030Y101	
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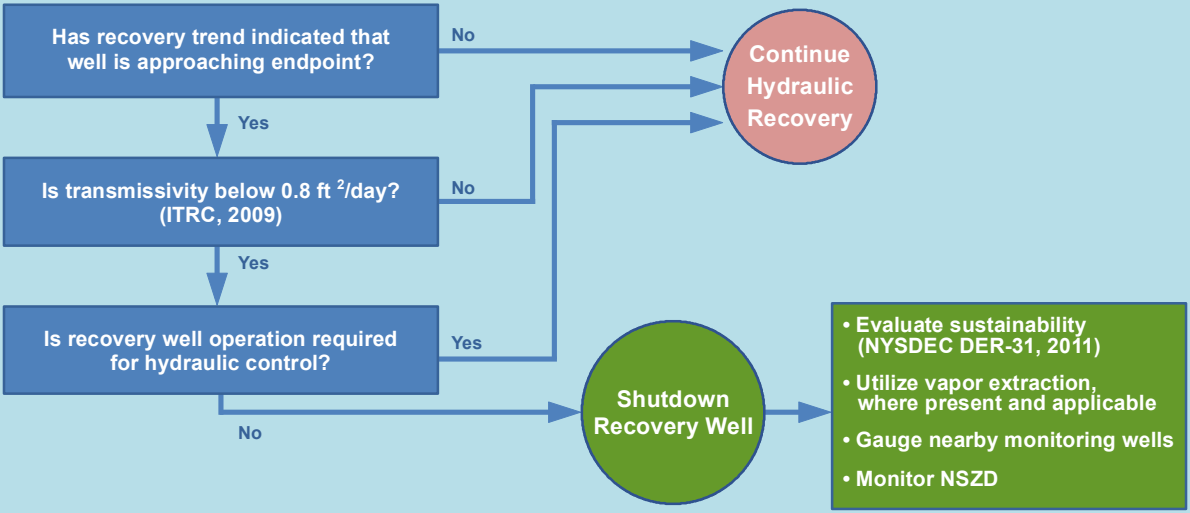
ATTACHMENTS

1. Recovery Well Shutdown Procedure

RECOVERY WELL SHUTDOWN PROCEDURE



Has recovery trend indicated that well is approaching endpoint?

- O&M documentation shows 90% operational status or above
- Recovery rate below 3 gallons per day
- Recovery rate below 5% of historical peak recovery rate
  - Recovery wells with low historical production not included
- Annual recovery below 1% of historical recovery total