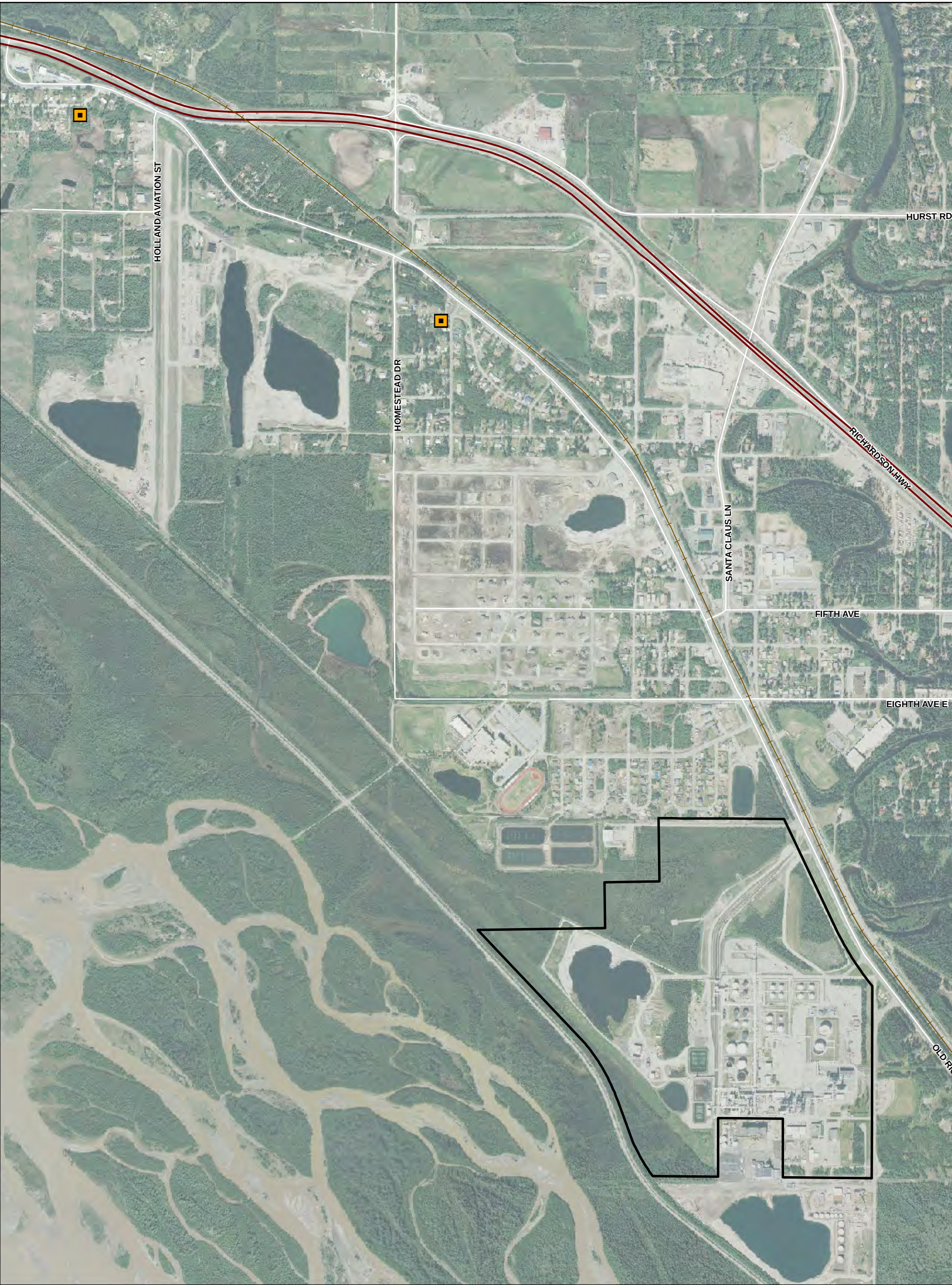




 Downgradient Surface Soil Sampling Location

 FHRA Property Boundary

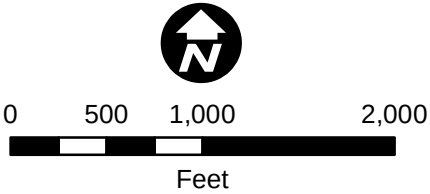
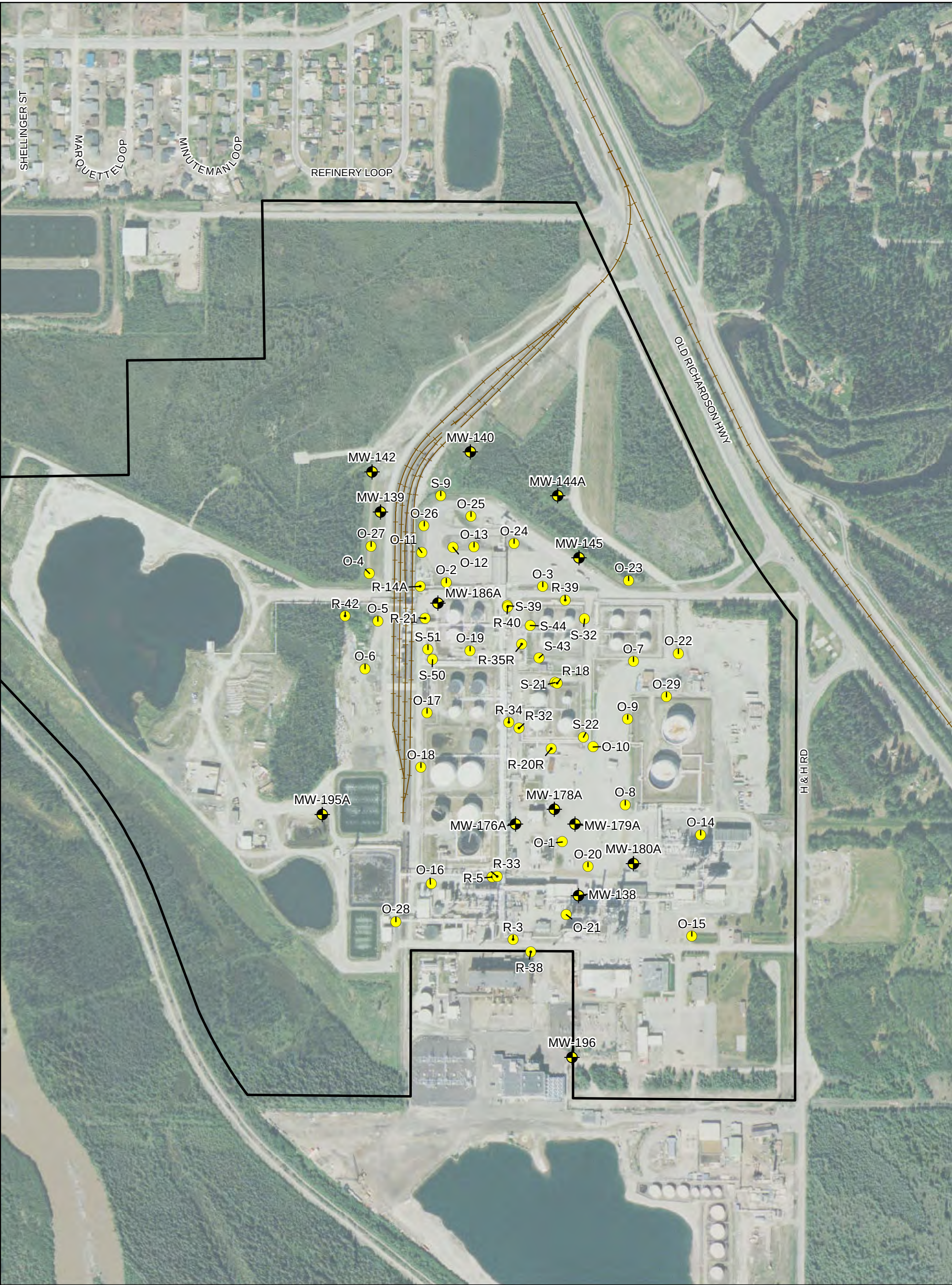


Figure 15
DOWNGRADIENT SURFACE SOIL
SAMPLING LOCATIONS
North Pole Refinery
Flint Hills Resources Alaska, LLC



- Monitoring Well
- Observation Well
- Recovery Well
- FHRA Property Boundary

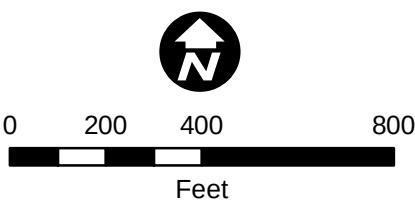
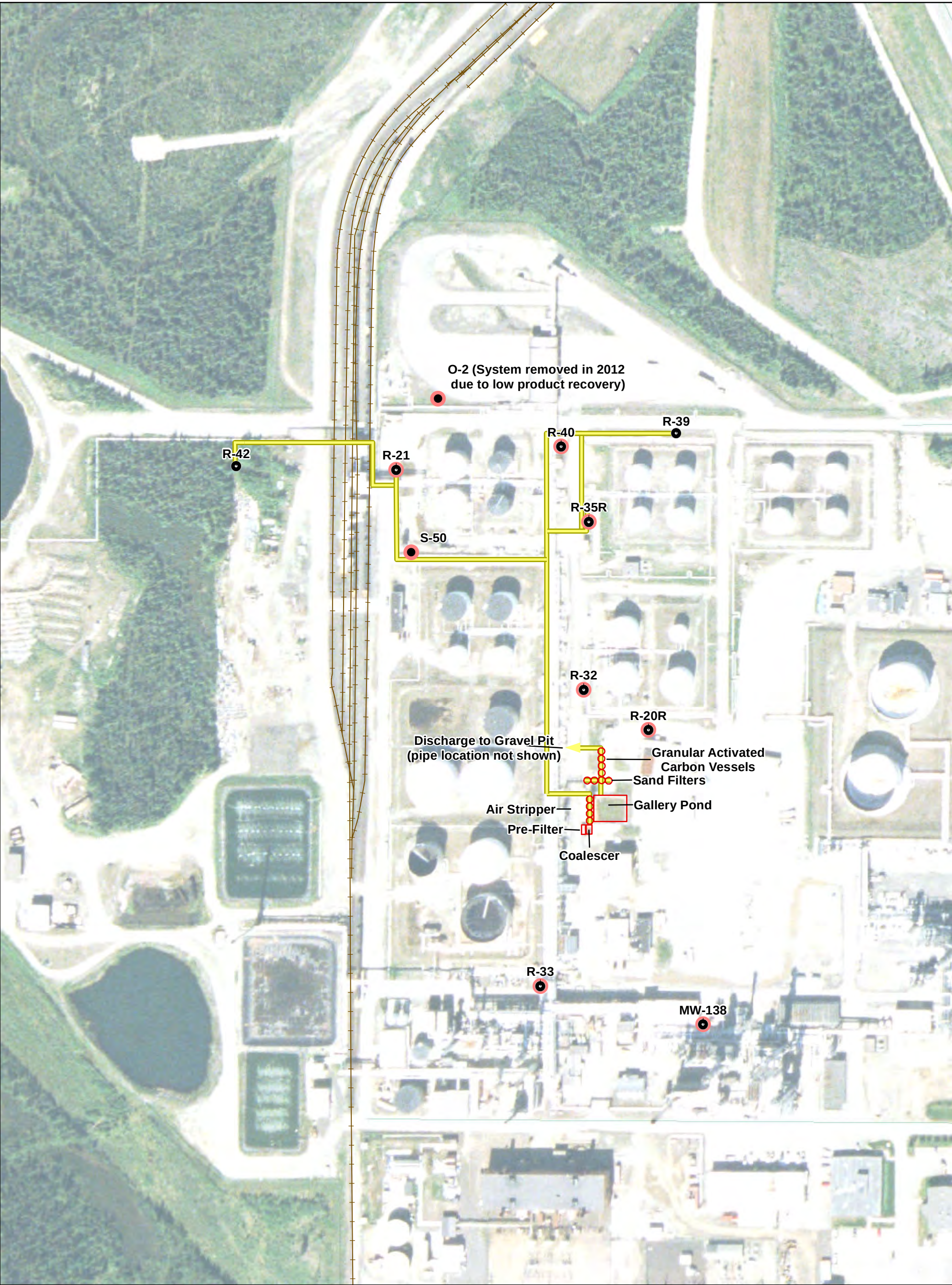


Figure 16
LNAPL MONITORING NETWORK
North Pole Refinery
Flint Hills Resources Alaska, LLC



- Observation Well
- Recovery Well
- Installed Product Recovery System
- Remediation System Piping

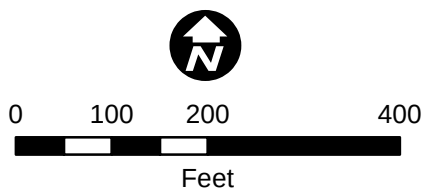
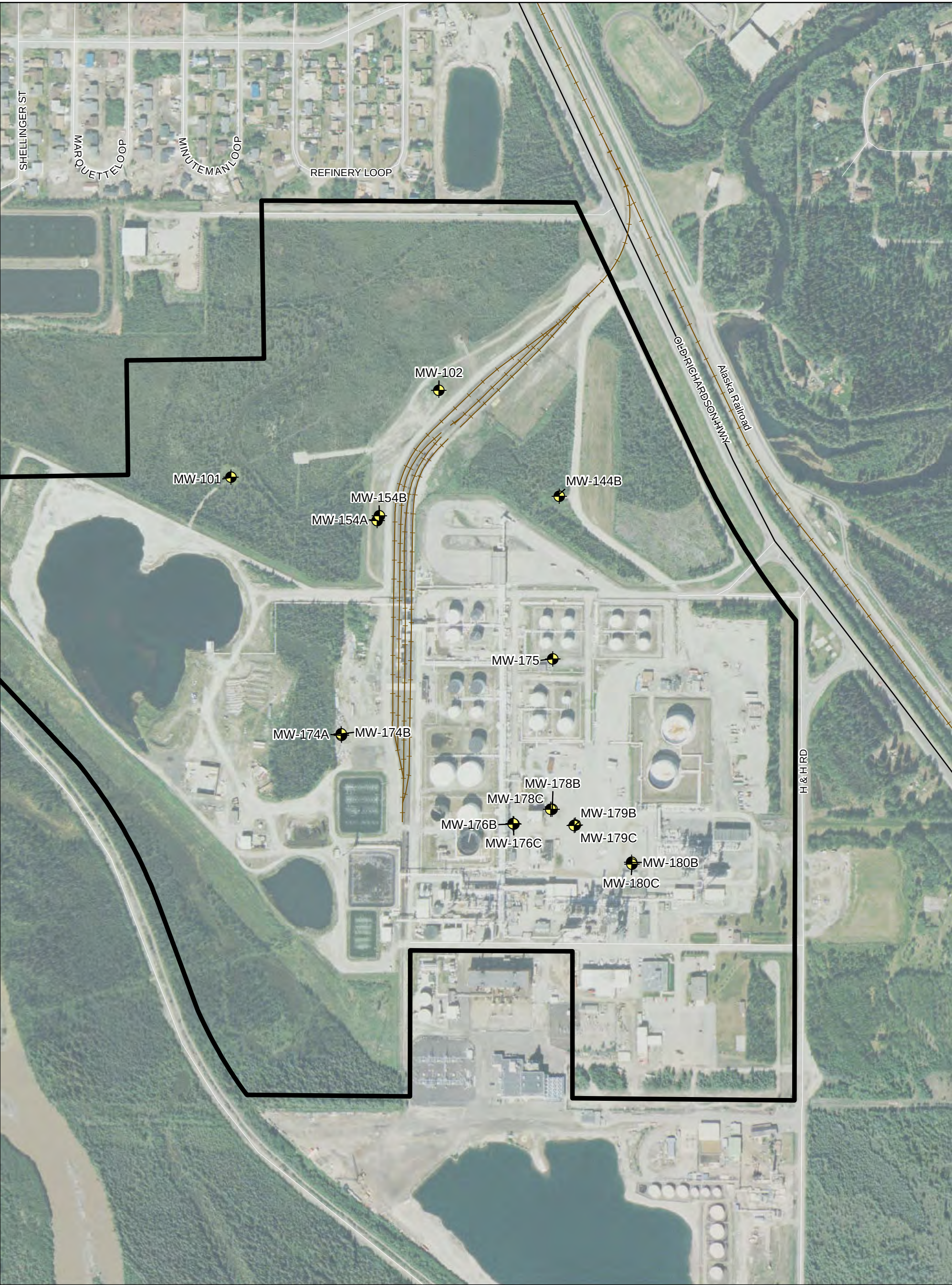


Figure 17
GROUNDWATER REMEDIATION
SYSTEM LAYOUT
North Pole Refinery
Flint Hills Resources Alaska, LLC



 Monitoring Well
 FHRA Property Boundary

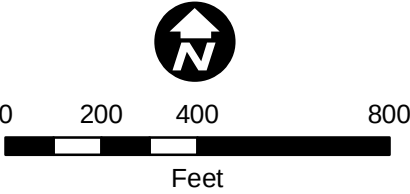
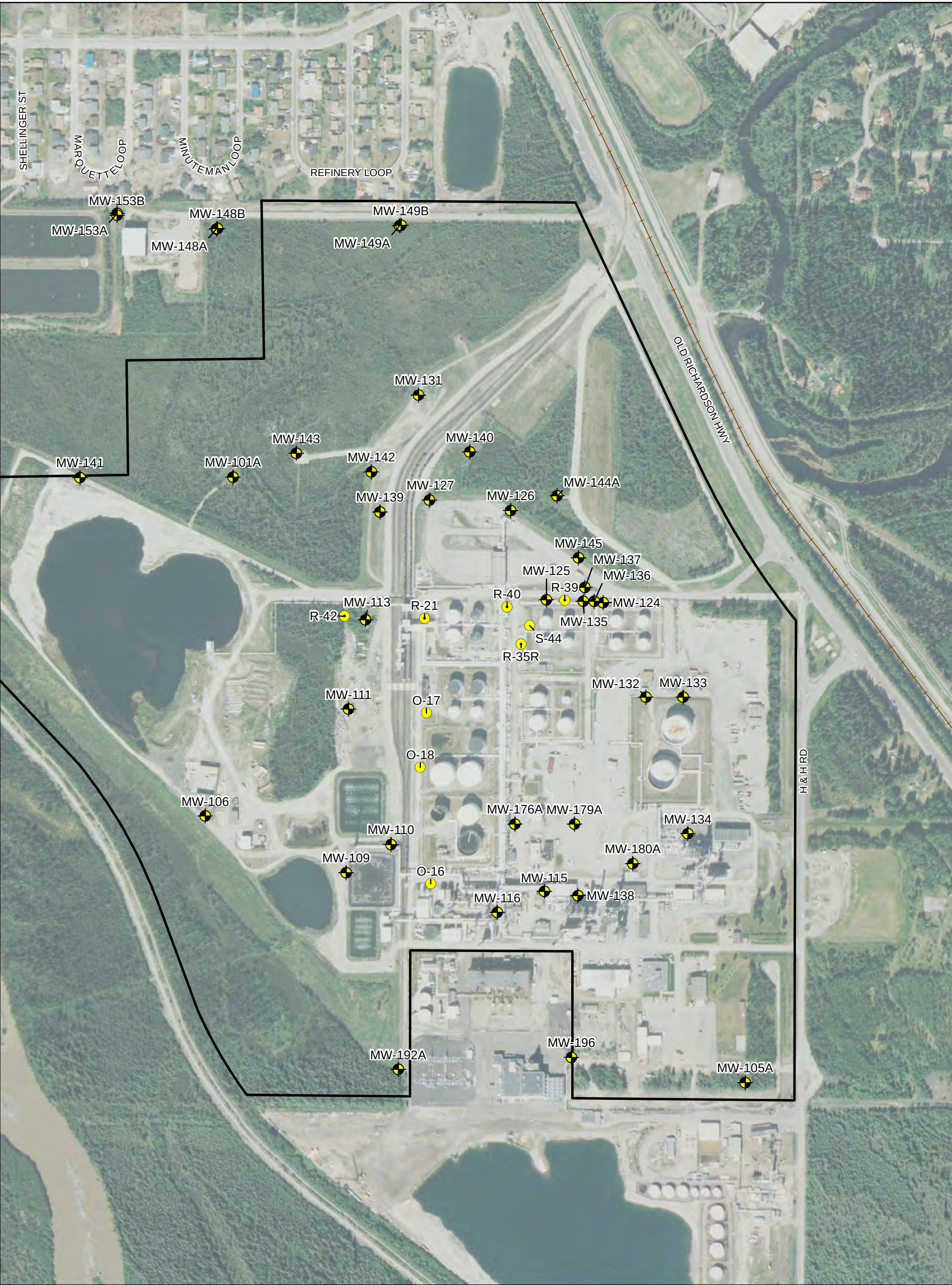


Figure 18
DNAPL ASSESSMENT WELLS
North Pole Refinery
Flint Hills Resources Alaska, LLC



- Monitoring Well
- Observation Well
- Recovery Well
- FHRA Property Boundary

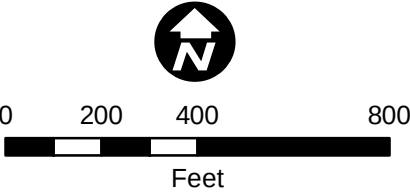


Figure 19
BTEX MONITORING NETWORK
North Pole Refinery
Flint Hills Resources Alaska, LLC

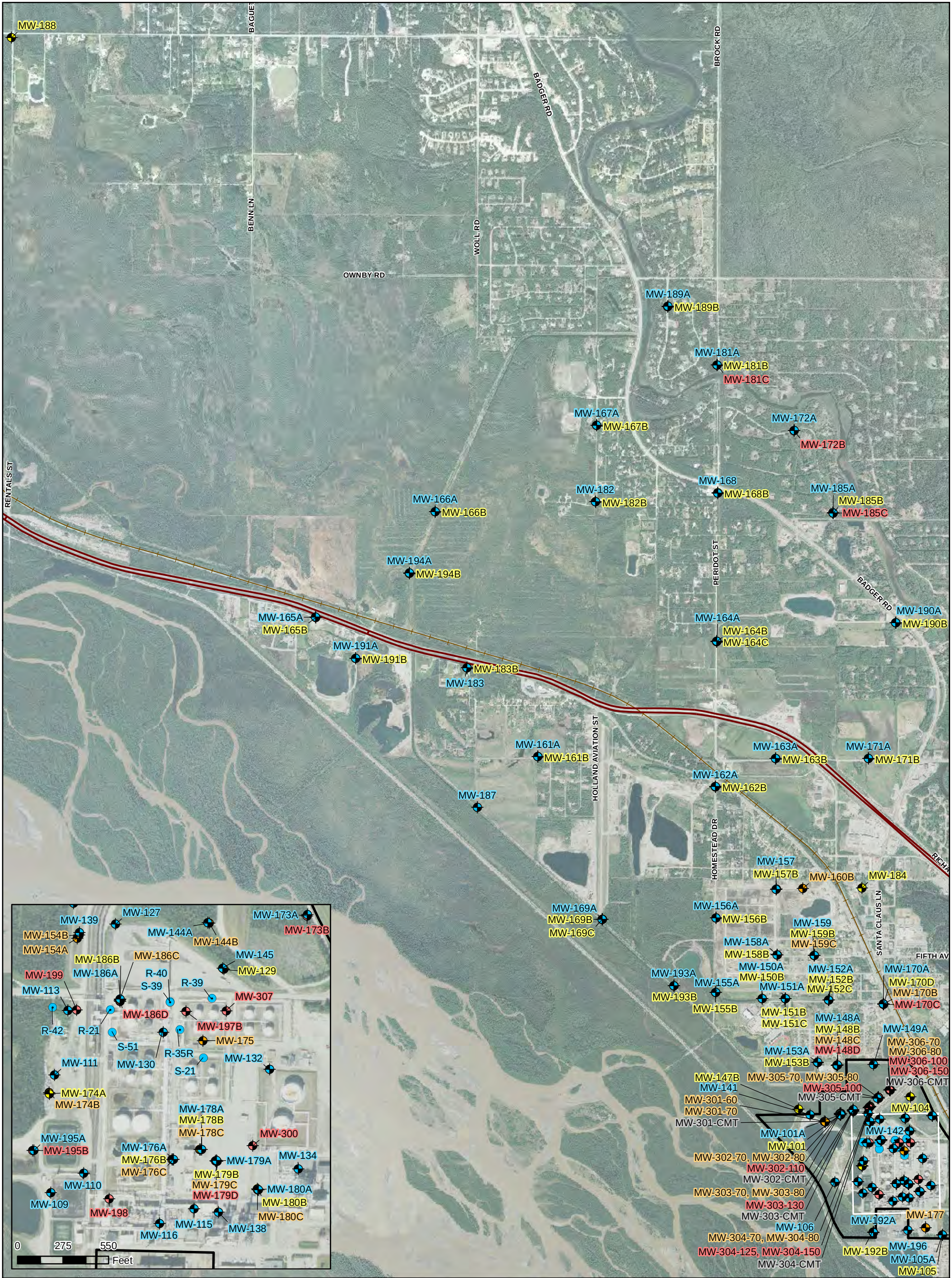
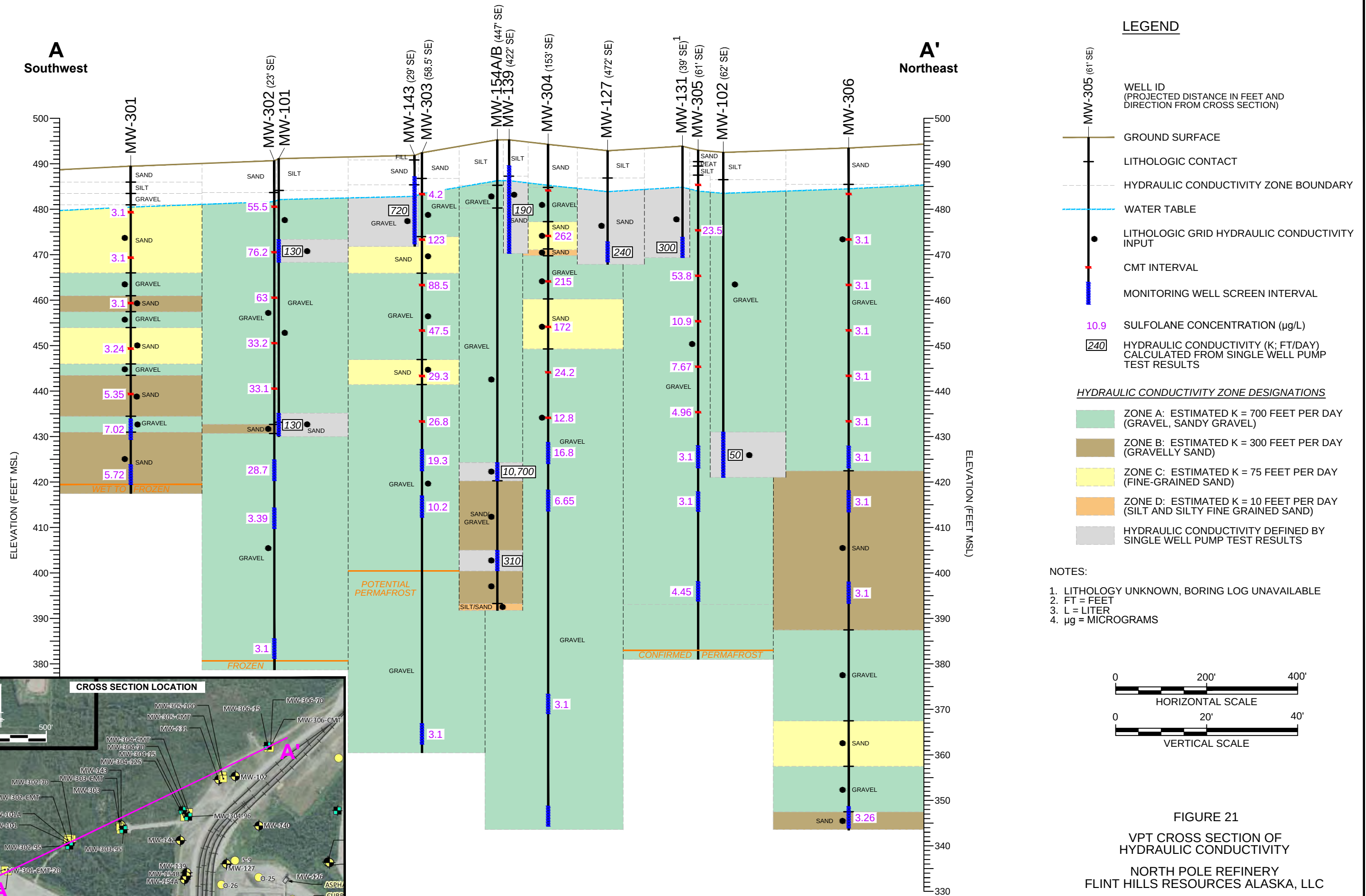
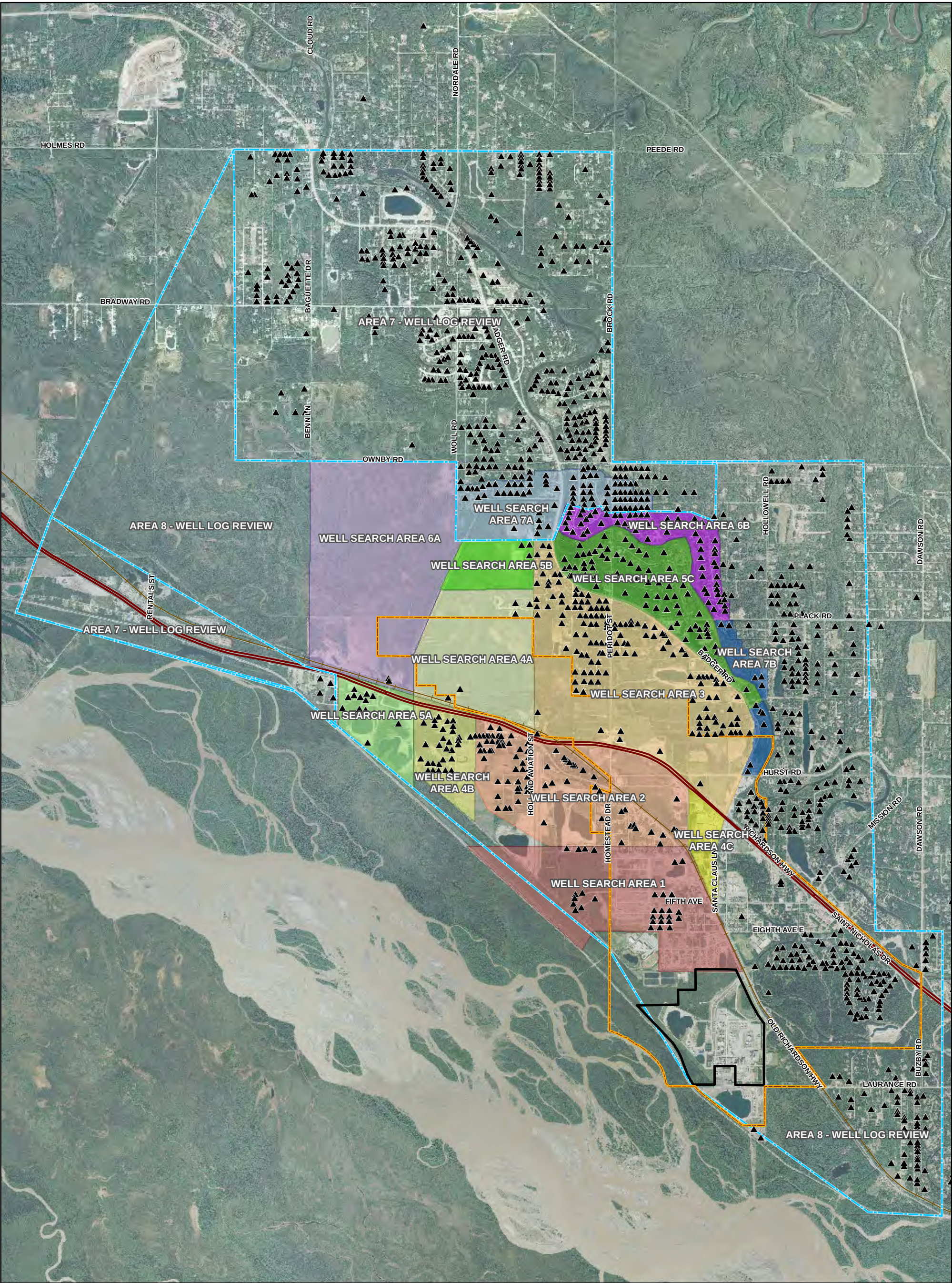


Figure 20
SULFOLANE MONITORING NETWORK
North Pole Refinery
Flint Hills Resources Alaska, LLC

CITY: PETALUMA, CA DIV: GROUP: ENV DB: J. HARRIS
G:\ENVCAD\Paraluma\ACT10001981001500001\DWG\81981\01b.dwg LAYOUT: WITH INSET SAVED: 11/29/2012 3:26 PM BY: HARRIS, JESSICA
XREFS: IMAGES: PROJECTNAME: -





- ▲ Private Wells
- North Pole City Boundary
- Well Log Search Areas
- Well Search Areas
- 1
- 2
- 3
- 4a
- 4b

- 4c
- 5a
- 5b
- 5c
- 6a
- 6b
- 7a
- 7b

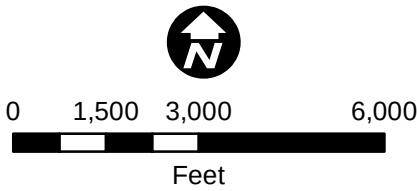


Figure 22
PRIVATE WELL SEARCH AREAS
AND SAMPLING LOCATIONS
North Pole Refinery
Flint Hills Resources Alaska, LLC



Figure 23
OTHER COPCs IN GROUNDWATER
SAMPLING LOCATIONS
North Pole Refinery
Flint Hills Resources Alaska, LLC



 Monitoring Well

 FHRA Property Boundary

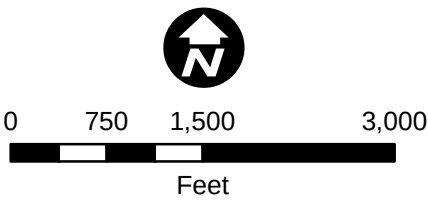


Figure 24
MNA MONITORING NETWORK
North Pole Refinery
Flint Hills Resources Alaska, LLC



-  Biotrap Sampler Installation Well - Phase 1
-  Proposed Biotrap Sampler Installation Well - Phase 2
-  Sulfolane Isopleth in µg/L from 4th Quarter 2011 (Dashed Where Approximate)
-  FHRA Property Boundary

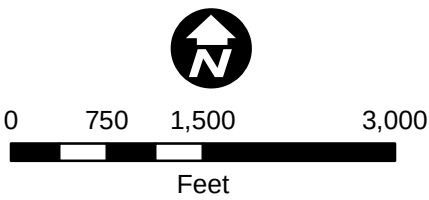


Figure 25
MICROBIOLOGICAL
CHARACTERIZATION
MONITORING WELL NETWORK
North Pole Refinery
Flint Hills Resources Alaska, LLC



- Isotope Investigation Monitoring Well - Phase 1
- ⊕ Proposed Isotope Investigation Monitoring Well - Phase 2
- - - Sulfolane Isopleth in µg/L from 4th Quarter 2011 (Dashed Where Approximate)
- FHRA Property Boundary

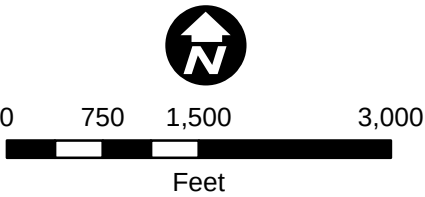


Figure 26
STABLE ISOTOPE INVESTIGATION
MONITORING WELL NETWORK
North Pole Refinery
Flint Hills Resources Alaska, LLC



-  Residential Well
-  Monitoring Well
-  FHRA Property Boundary

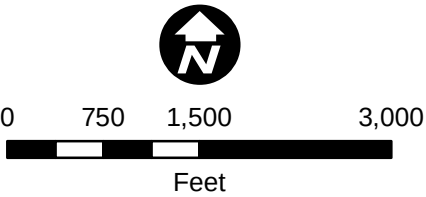
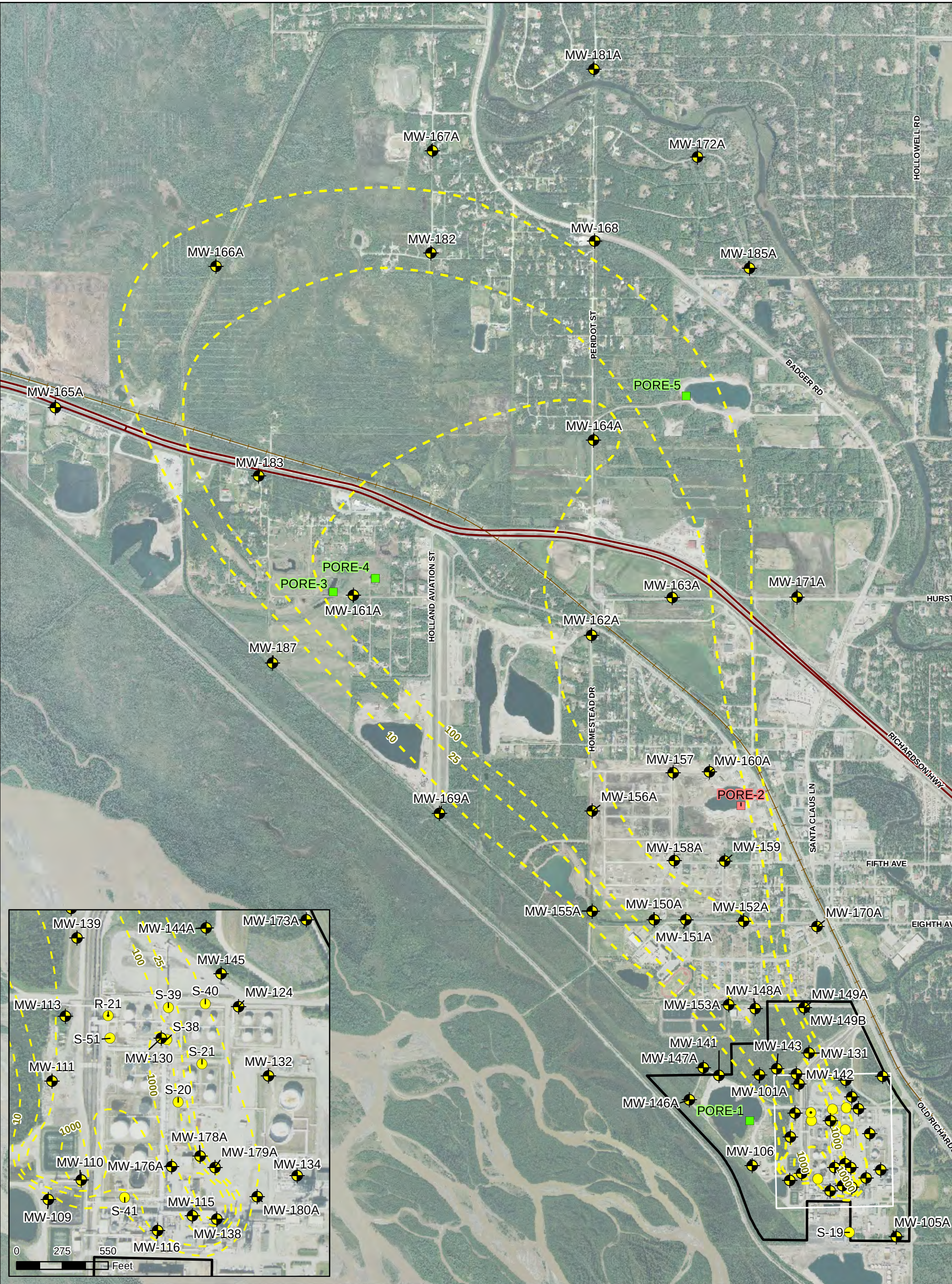


Figure 27
GEOCHEMICAL EVALUATION OF
PRIVATE WELL RESULTS
North Pole Refinery
Flint Hills Resources Alaska, LLC



Figure 28
GRAVEL PIT AND SURFACE
WATER SAMPLE LOCATIONS
North Pole Refinery
Flint Hills Resources Alaska, LLC



- Sampled Pore Water Location
- Proposed Pore Water Sample Location
- Monitoring Well
- Observation Well
- Recovery Well
- Sulfolane Isopleth in µg/L from 4th Quarter 2011
- FHRA Property Boundary

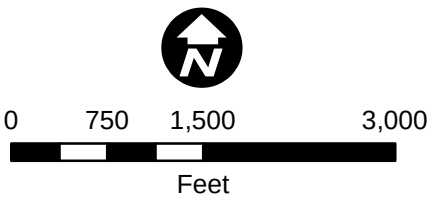
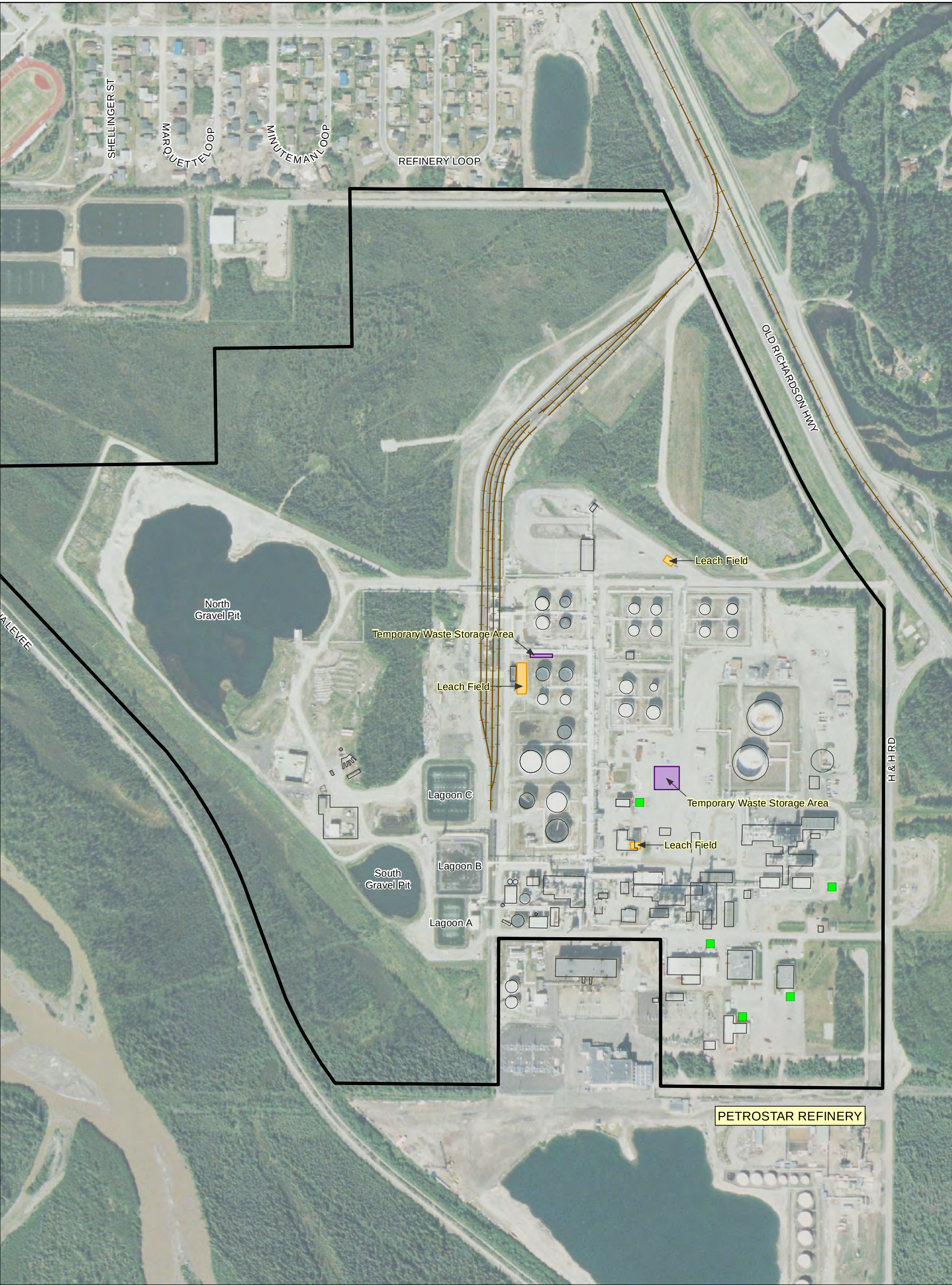


Figure 29
PORE WATER
SAMPLING LOCATIONS
North Pole Refinery
Flint Hills Resources Alaska, LLC



■ UST
■ Domestic Wastewater Leach Field
■ Temporary Waste Storage Area
■ FHRA Property Boundary

Note: Additional domestic wastewater leach fields are present at the Firehouse and Construction Office (abandoned).

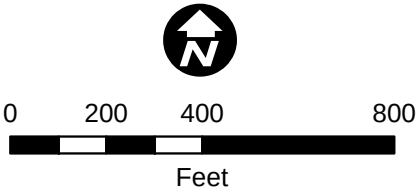
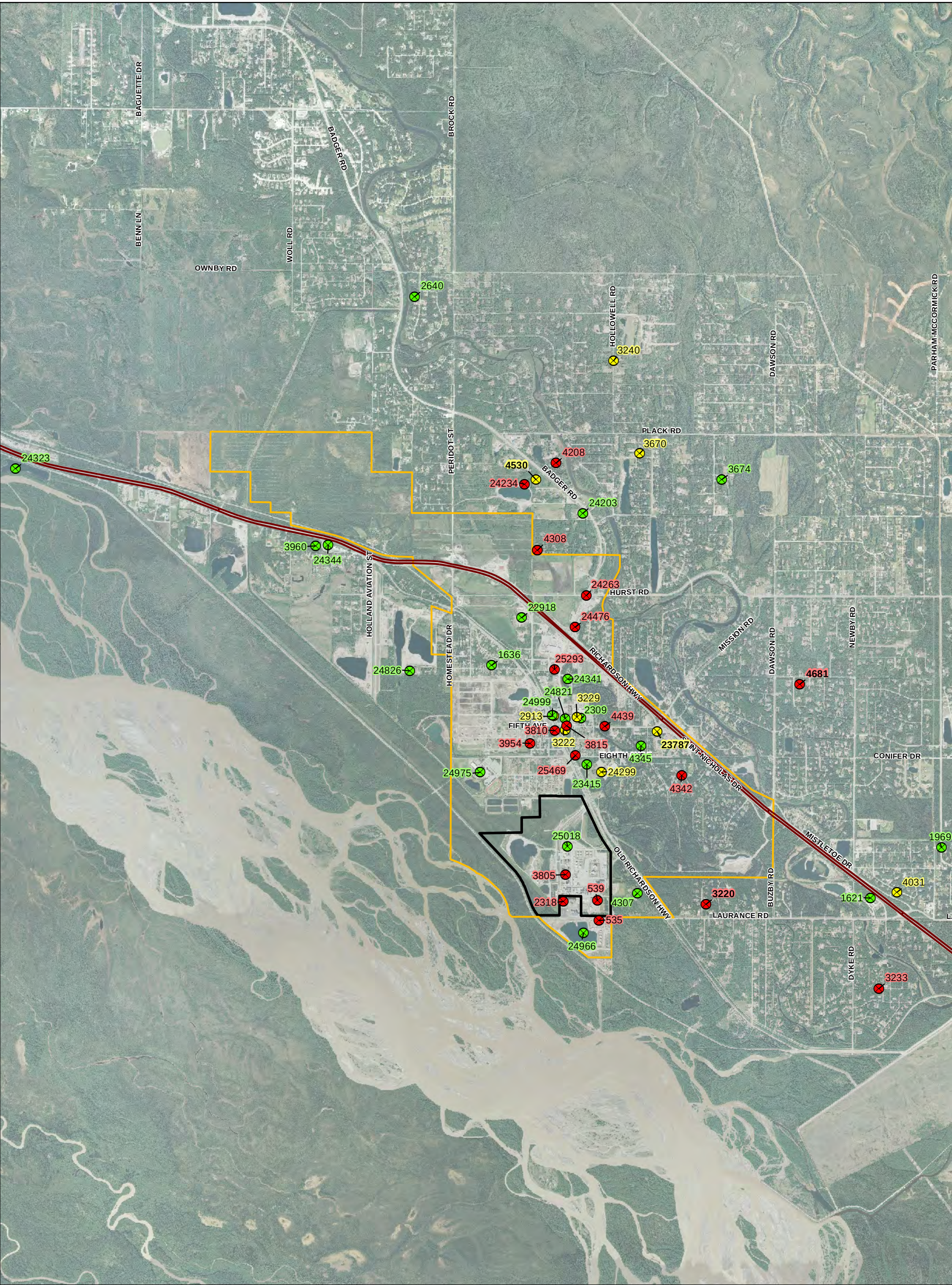


Figure 30
USTs, SEPTIC LEACH FIELDS,
WASTE STORAGE AREAS
North Pole Refinery
Flint Hills Resources Alaska, LLC



ADEC Contaminated Sites

- Active
- Cleanup Complete
- Cleanup Complete - Institutional Controls

FHRA Property Boundary

North Pole City Boundary

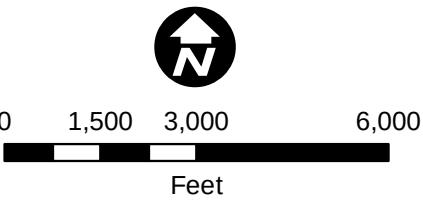
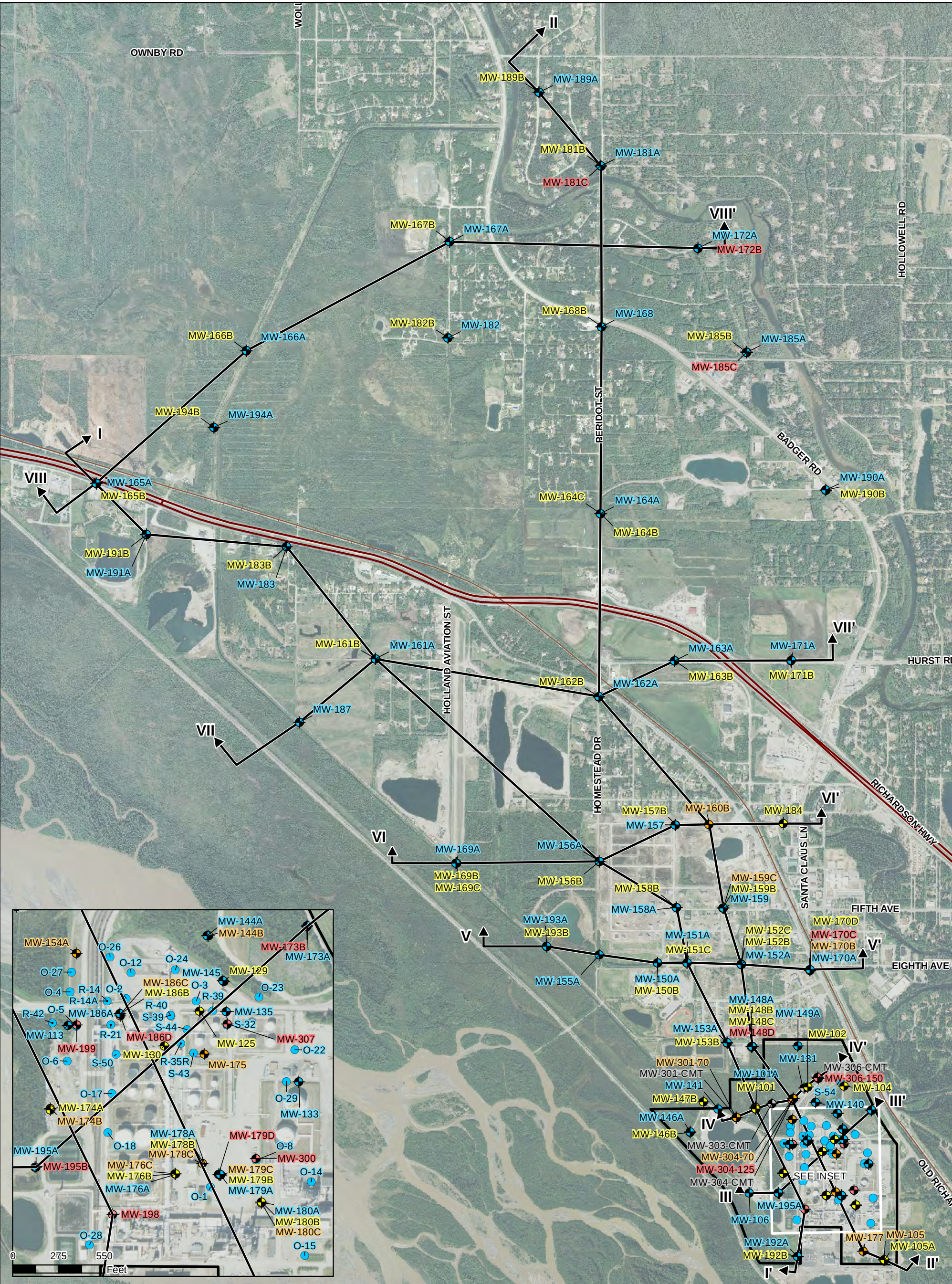


Figure 31
ADEC CONTAMINATED SITES
IN THE AREA OF THE FHRA
North Pole Refinery
Flint Hills Resources Alaska, LLC



- ↔ Cross-Section Locations
- Monitoring Well Within 10 Feet of the Water Table
- Monitoring Well 10 to 55 Feet Below the Water Table
- Monitoring Well 55 to 90 Feet Below the Water Table
- Monitoring Well 90 to 160 Feet Below the Water Table
- CMT Wells, Multiple Screens
- Observation Well Within 10 Feet of the Water Table
- Recovery Well Within 10 Feet of the Water Table
- FHRA Property Boundary

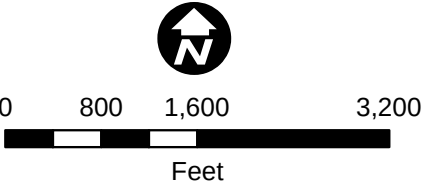


Figure 32
CROSS-SECTION LOCATIONS
North Pole Refinery
Flint Hills Resources Alaska, LLC