

National Aeronautics and
Space Administration
Lyndon B. Johnson Space Center
White Sands Test Facility
P.O. Box 20
Las Cruces, NM 88004-0020



May 5, 2014

Reply to Attn of: RE-14-051

Mr. John E. Kieling, Chief
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

Subject: NASA WSTF Groundwater Dye Tracer Test Supplemental Sampling Locations

On May 10, 2012, NASA submitted the *Work Plan for Tracer Testing in the 200/600 Areas and Mid-plume Constriction Area*. NMED approved the work plan on July 20, 2012. Since approval of the work plan, NASA has continued to prepare for implementation of the groundwater dye tracer test and has identified several supplemental monitoring locations downgradient of the dye release locations in the 200 Area and Mid-plume Constriction Area (MPCA). On April 3, 2014, NASA representatives discussed the supplemental sampling with NMED (Mr. Dan Comeau). This submittal provides additional information about the proposed supplemental sampling locations for the planned groundwater dye tracer test at WSTF. The supplemental monitoring locations will provide additional coverage for data collection during the groundwater tracer test. The data collected from the supplemental monitoring locations will be used in conjunction with data collected from the wells identified in the work plan to achieve the overall objective of the project, which is to track movement of the dye in groundwater to enhance overall understanding of groundwater movement through the 200/600 Areas and MPCA.

Enclosure 1 provides a list of proposed supplemental monitoring locations for this project. These include monitoring wells 100-D-176, BLM-27-270, and BLM-13-300. These wells are expected to primarily monitor for groundwater tracer dye released in the 200 Area. The individual monitoring zones in multi-port well BW-4 are also identified in Enclosure 1 for clarification. Supplemental monitoring wells for the MPCA groundwater tracer release include MPE-3, BLM-25-455, and BLM-6-488. NASA will supplement the tracer monitoring at the Mid-plume Interception and Treatment System extraction wells originally identified in the work plan with wells MPE-9, MPE-10, and MPE-11. Specific zones that will be monitored for groundwater tracer dye in multi-port wells BLM-36, BLM-38, and BLM-39 are also listed in the enclosure for clarification.

Enclosure 1 additionally identifies the wells that were listed in the work plan as monitoring locations for groundwater dye tracer, but will now be excluded. These include wells NASA-7 and IS-1, which were plugged and abandoned in January 2014. Well MPE-7 will also be excluded as a monitoring location because recent well development activities have shown

this well is likely biofouled. NASA determined that the well produces minimal water and is not suitable for a tracer monitoring location.

Enclosures 2 and 3 provide an updated comprehensive list of monitoring locations for the 200 Area and MPCA groundwater dye tracer test. Enclosures 4 and 5 provide location maps for each release location and present the monitoring locations identified in the work plan, proposed supplemental monitoring locations, and locations that will be removed from the monitoring program.

Supplemental and excluded monitoring locations that differ from the monitoring locations identified in the work plan will be identified and fully documented in the deviations section of the investigation report for this project. The investigation report will be submitted to the NMED at the conclusion of the project.

If you have any questions or comments concerning this submittal, please contact Michael Jones at 575-524-5604 or michael.e.jones@nasa.gov.



Radel Bunker-Farrar
Chief, Environmental Office

Enclosures (5)

cc:

Mr. Dan Comeau
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

Enclosure 1: Groundwater Tracer Test Supplemental and Excluded Sampling Locations

Supplemental Conventional Well Sampling Locations

Well	Primary Dye Monitoring Area
100-D-176	200
BLM-13-300	200
BLM-27-270	200
BLM-6-488 ¹	MPCA
BLM-25-455	MPCA
MPE-3	MPCA

Supplemental Multiport Well Sampling Locations

Well	Zone (approximate depth bgs, ft)	Primary Dye Monitoring Area
BW-4	270	200
	355	
	455	
BLM-36	350	MPCA
	610	
	800	
	860	
BLM-38	480	MPCA
	620	
BLM-39	345	MPCA
	385	
	560	

Supplemental Extraction Well Sampling Locations

Well	Primary Dye Monitoring Area
MPE-9	MPCA
MPE-10	MPCA
MPE-11	MPCA

Excluded Sampling Locations

Well	Primary Dye Monitoring Area	Reason for Exclusion
NASA-7	200	Plugged & Abandoned
IS-1	MPCA	Plugged & Abandoned
MPE-7	MPCA	Biofouled

¹ Will be sampled if dye is detected in BLM-13-300, BLM-23-431, or BLM-25-455.

Enclosure 2: 200 Area Groundwater Tracer Test Sampling Locations

200 Area Groundwater Tracer Sampling Conventional Well Locations (14 Wells)

Well	Well Type Subcategory
100-D-176	Monitoring
100-HG-139	Monitoring
200-B-240	Monitoring
200-D-109	Monitoring
200-D-240	Monitoring
200-JG-110	Monitoring
200-SG-1	Monitoring
200-SG-2	Monitoring
200-SG-3	Monitoring
600-G-138	Monitoring
BW-3-180	Monitoring
NASA 4	Monitoring
BLM-27-270	Monitoring
BLM-13-300	Monitoring

200 Area Groundwater Tracer Sampling Multiport Well Locations (5 Wells; 18 Zones)

Well	Zone (approximate depth bgs, ft)
200-F	225
	370
	420
	570
200-G	175
	220
	340
	420
200-H	495
	331
200-I	433
	180
	300
	375
BW-4	490
	270
	355
	455

Enclosure 3: MPCA Groundwater Tracer Test Sampling Locations

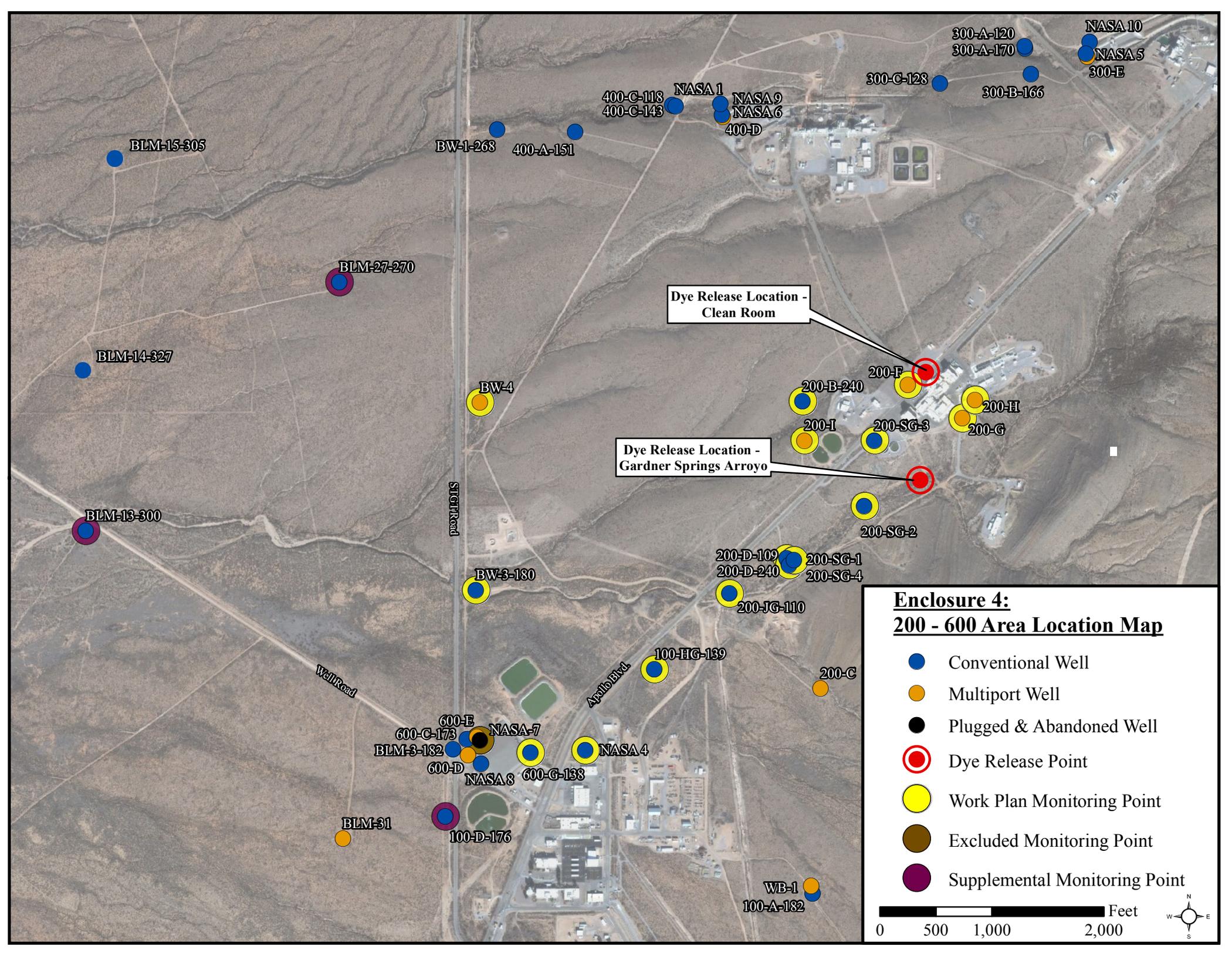
MPCA Groundwater Tracer Sampling Conventional Well Locations (18 Wells)

Well	Well Type Subcategory
BLM-6-488 ¹	Monitoring
BLM-9-419	Monitoring
BLM-18-430	Monitoring
BLM-21-400	Monitoring
BLM-22-570	Monitoring
BLM-23-431	Monitoring
BLM-26-404	Monitoring
BLM-25-455	Monitoring
MPE-1	Extraction
MPE-2	Exploratory
MPE-3	Exploratory
MPE-4	Exploratory
MPE-5	Exploratory
MPE-6	Exploratory
MPE-8	Extraction
MPE-9	Extraction
MPE-10	Extraction
MPE-11	Extraction

MPCA Groundwater Tracer Sampling Multiport Well Locations (3 Wells; 9 Zones)

Well	Zone (approximate depth bgs, ft)
BLM-36	350
	610
	800
	860
BLM-38	480
	620
BLM-39	345
	385
	560

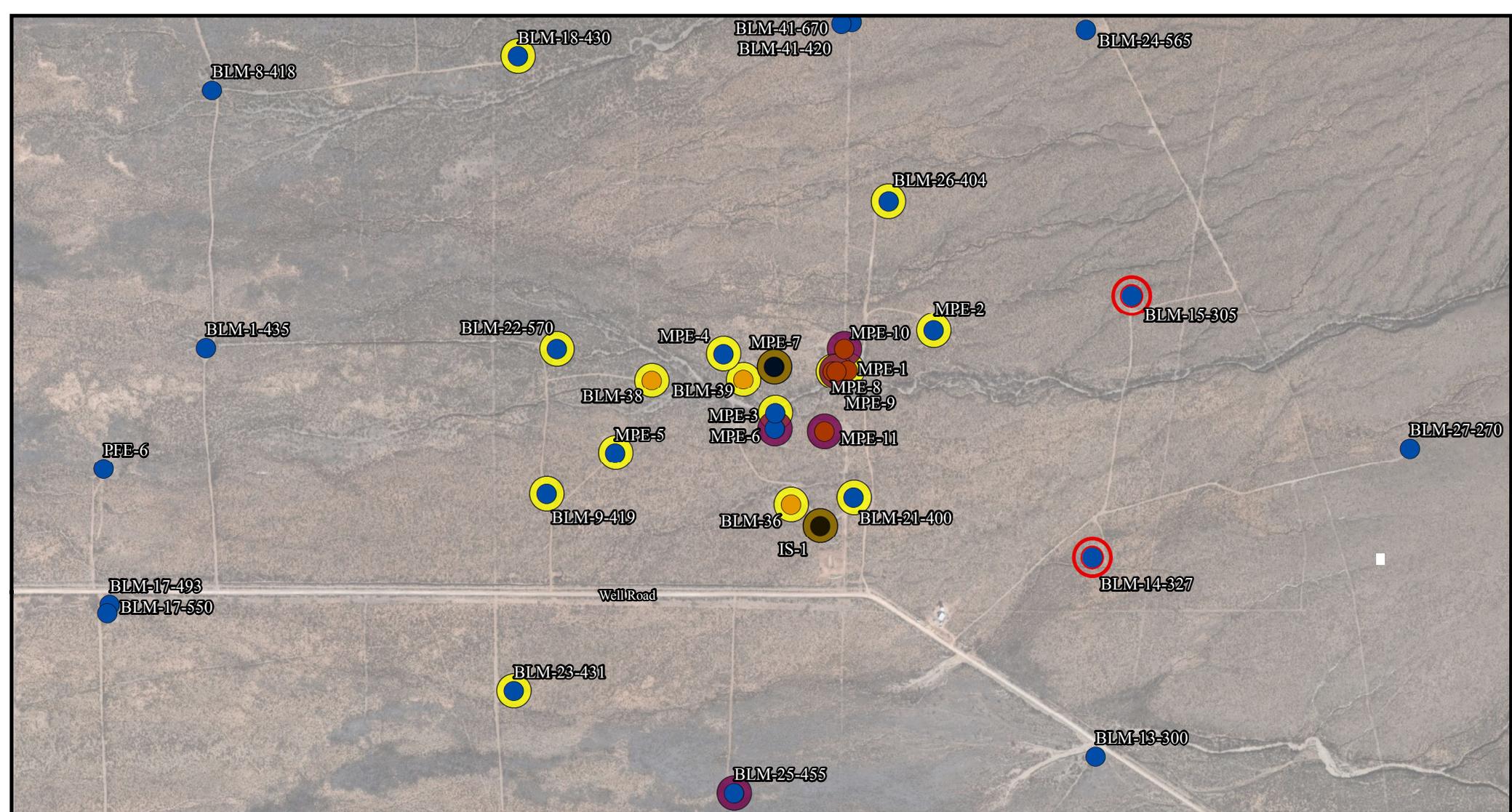
¹ Will be sampled if dye is detected in BLM-13-300, BLM-23-431, or BLM-25-455.



Enclosure 4:
200 - 600 Area Location Map

- Conventional Well
- Multiport Well
- Plugged & Abandoned Well
- Dye Release Point
- Work Plan Monitoring Point
- Excluded Monitoring Point
- Supplemental Monitoring Point





Enclosure 5:
Mid-plume Constriction Area Location Map

 Conventional Monitoring Point	 Excluded Monitoring Point
 Multiport Monitoring Point	 Supplemental Monitoring Point
 Extraction Well	 Work Plan Monitoring Point
 Plugged & Abandoned Well	
 Dye Release Point	

0 625 1,250 2,500 Feet



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