N00164.AR.001911
NSA CRANE
5090.3a

FINAL FIELD TASK MODIFICATION REQUEST (SAMPLING AND ANALYSIS PLAN) FOR DELINEATION AND CONFIRMATION SAMPLING IN SUPPORT OF PRESCRIPTIVE PCB REMEDIATION AT SOLID WASTE MANAGEMENT UNIT 17 (SWMU17) PCB CAPACITOR BURIAL/POLE YARD NSA CRANE IN
4/10/2013
TETRA TECH

NAVFAC Atlantic Biological Resource Services

Contract: N62470-08-D-1008; Task Order: F270

April 2013

Final Field Task Modification Request (Sampling and Analysis Plan) for Delineation and Confirmation Sampling In Support of Prescriptive PCB Remediation at Solid Waste Management (SWMU)17 - PCB Capacitor Burial/Pole Yard

Naval Support Activity
Crane, Indiana

Prepared for:
Naval Facilities
Engineering Command
Midwest

Prepared by:
Tetra Tech, Inc.
2200 Wilson Blvd., Suite 400
Arlington, VA 22201

TETRA TECH
FIELD TASK MODIFICATION REQUEST
(SAMPLING AND ANALYSIS PLAN) (FINAL)

NSA Crane	CTO F270, 112IG05219	NA
Project/Installation Name	**CTO & Project Number**	**Task Mod. Number**
Tech Memo for PCB Delineation	SWMU 17 IM Phases 1 and 3	**4/92013**
Modification To (e.g. Work Plan)	**Site/Sample Location**	**Date**

Activity Description: This FTMR is the final version of the FTMR dated 4/4/2013 (signed 4/5/2013 by Tetra Tech and NAVFAC). To support Solid Waste Management Unit (SWMU) 17 Interim Measures (IM), Phases 1 and 2 beginning in spring of 2013, additional *delineation* and *confirmation* samples must be collected. *Delineation* samples will be collected during IM Phase 1 only, prior to excavation, to define excavation boundaries. *Confirmation* samples will be collected during IM Phase 1 and Phase 2, *while excavation is occurring,* to verify that excavation boundaries are less ≤ 1 mg/kg total PCBs. The three areas where additional *delineation* samples will be collected at the start of Phase 1 are shown on attached Figures 2-6 and 3-1, which were excerpted from the March 2013 IM Work Plan (IMWP). These locations are also described in detail in Table 1. Confirmation sampling locations to be sampled during Phases 1 and 2 are presented in Tables 2 and 3, respectively, and are shown on various March 2013 SWMU 17 IMWP figures (as referenced in Tables 1 and 2). Drainage channel delineation samples will be analyzed sequentially from upstream to downstream until the total PCB concentration is ≤1 mg/kg. Samples will be collected using a hand auger or, if the Tetra Tech Field Operations Leader (FOL) determines it will be more efficient, by using a scoop and trowel. Pre-designated survey locations are presented on Table 4; these locations will be surveyed to establish IM Phase 1 excavation boundaries. More locations may be added at FOL discretion and support for aqueous sample analyses is desired, should aqueous samples be collected. Contact information is presented in Attachment 1 for key project personnel. Laboratory certifications and quality specifications are provided in Attachment 2. EPA concurrence to the sampling strategy is included as an e-mail thread in Attachment 3. Document actual sampling locations in the IM Report, which will be completed at the conclusion of the IM.

Reason for Change:
The IM for removing PCB contamination at SWMU 17 will be conducted in two phases. Phase 1 involves removal of all soil around buildings in excess of 1 mg/kg total PCBs and the upper most elevations of Ditch 8a and the Northwest Ditch. Phase 2 involves removal of PCB contamination in ditches, streams, and floodplains, including an area around sediment sampling location 17SD105 located downstream of Boggs Creek Stream Segment 1 (see attached IMWP Figure 2-5). Recently completed delineation sampling left a few places in ditches, floodplains, and building areas where PCB concentrations were not definitively demonstrated to be ≤1 mg/kg. Additional delineation samples must be collected before starting excavation whereas confirmation samples must be collected as excavation sidewalls are exposed. This FTMR was prepared to describe this additional sampling for both phases of the IM. This FTMR supplements previously issued sampling and analysis plans. The history of sampling plan documentation is attached as Table 5.

Recommended Disposition: Approve the additional sampling as described above.

Tom Johnston	**4/9/2013**
Project Manager	Date

NAVFAC Concurrence: HICKEY.HOWARD.M.1287981070 Digitally signed by HICKEY.HOWARD.M.1287981070 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USN, cn=HICKEY.HOWARD.M.1287981070 Date: 2013.04.10 09:04:28 -07'00' (Howard Hickey) 4/10/13 (Date)

EPA Concurrence: (Peter Ramanauskas) 4/10/13 (Date)

Approved Disposition: Conduct work as describe under "Recommended Disposition."

T.E. Johnston
Project/ Manager (Signature)

4-9-13
Date

Distribution:

Program/Project File –_CTO F270/112IG05219
Project/Task Order Manager – Tom Johnston, Tetra Tech
Field Operations Leaders – K. Losekamp, Tetra Tech
Project Chemist – Michelle Allen, Tetra Tech

Other: Howard Hickey, NAVFAC Midwest
Tom Brent, Env. Site Mgr. NSA Crane
Chris Soucier, Program Manager, Tt
Ralph Basinski, Activity Coordinator, Tt

TABLE 1[1]
PHASE 1 DELINEATION SAMPLING LOCATIONS FOR PRESCRIPTIVE PCB REMEDIATION AT SOLID WASTE MANAGEMENT UNIT 17
NSA CRANE
CRANE, INDIANA

Location[2]	Sample[2]	IMWP Figure	Description
Soil Delineation Samples to be Collected During Interim Measures, Phase 1			
17SB458	17SB4580001	3-1	Collect one soil grab sample at a single location from 0-1 ft bgs on the northwest corner of Excavation Area 3A-2 near 17SB115 at the highest excavation boundary elevation. **Note:** In the IMWP, this sampling location is identified as a confirmation sampling location but it is being treated during Phase 1 as a delineation sampling location.
17SB458	17SB4580102	3-1	Collect one soil grab sample at a single location from 1-2 ft bgs on the northwest corner of Excavation Area 3A-2 near 17SB115 at the highest boundary elevation. **Note:** In the IMWP, this sampling location is identified as a confirmation sampling location but it is being treated during Phase 1 as a delineation sampling location.
17SB459	17SB4590001 (S&H)	3-1	Collect one soil grab sample at a single location from 0-1 ft bgs, and about 2 ft northwest of soil boring 17SB458. **Note:** In the IMWP (Figure 3-1), this sampling area is identified as a confirmation sampling location but it is being treated during Phase 1 as a delineation sampling location.
17SB459	17SB4590102 (S&H)	3-1	Collect one soil grab sample at a single location from 1-2 ft bgs, and about 2 ft northwest of soil boring 17SB458. **Note:** In the IMWP (Figure 3-1), this sampling area is identified as a confirmation sampling location but it is being treated during Phase 1 as a delineation sampling location.
17SB460 to TBD (with EPA concurrence)	17SB4600002 to TBD (some may be S&H)	2-6	Collect soil grab samples at a various depths and locations to bound PCB contamination greater than 1 mg/kg in three dimensions. Select locations based on local topography as viewed in the field. Samples will be placed within, and may be placed outside, the approximate boundary shown on IMWP Figure 2-6. Obtain EPA concurrence with planned sampling locations and depths.
Sediment Delineation Samples to be Collected During Interim Measures, Phase 1			
17SW/SD128	17SW/SD1280012	3-1	Collect this sample at the downstream edge of Boggs Creek Stream Segment 1 remediation channel. See attached IMWP figures 2-8 and 3-1.
17SW/SD129	17SW/SD1290012 (S&H)	3-1	Collect this sample about 30 ft downstream of the downstream edge of Boggs Creek Stream Segment 1 remediation channel. See attached IMWP figures 2-8 and 3-1.
17SW/SD130	17SW/SD1300012	3-1	Collect this sample about 3 ft downstream of sampling location 17SW/SD127 (i.e., downstream edge of excavation channel segment of Ditch 8a). See attached IMWP figures 2-7 and 3-1.
17SW/SD131	17SW/SD1310012 (S&H)	3-1	Collect this sample about 8 ft downstream of sampling location 17SW/SD127 (i.e., downstream edge of excavation channel segment of Ditch 8a). See attached IMWP figures 2-7 and 3-1.

17SW/SD132	17SW/SD13200012 (S&H)	3-1	Collect this sample about 15 ft downstream of sampling location 17SW/SD127 (i.e., downstream edge of excavation channel segment of Ditch 8a). See attached IMWP figures 2-7 and 3-1.

1. A 3-day turnaround time will be requested unless the sample is marked “S&H” (sample and hold). Samples marked “S&H” will be held by the laboratory pending direction from Tetra Tech to analyze them.
2. Some Phase 1 samples will be collected in Phase 2 remediation areas to ensure the analysis results are available for the start of Phase 2.

Note: Number of Delineation Samples = nine samples.

TABLE 2[1]

PHASE 1 CONFIRMATION SAMPLING LOCATIONS FOR PRESCRIPTIVE PCB REMEDIATION AT SOLID WASTE MANAGEMENT UNIT 17 NSA CRANE CRANE, INDIANA

Area	Rationale	Additional Sampling
4A-10	The contamination on the western edge of this excavation area has not been definitively demonstrated to be less than 1 mg/kg	Sample western wall of indicated excavation boundary (see IMWP Figure 3-6) using a single composite sample collected in the same manner as described in Section 3.2.4.1, between excavation nodes 108 and 109. Continue confirmation sampling and excavation away from the contaminated area until the confirmation sample PCB concentration is ≤1 mg/kg. Each additional step out excavation boundary should be located no more than 1 ft west of the previous excavation boundary. Number samples in accordance with instructions provided in IMWP Section 3.2.4.1.
4C	The contamination on the western edge of this excavation area has not been definitively demonstrated to be less than 1 mg/kg	Sample western wall of indicated excavation boundary (see IMWP Figure 3-5) using a single composite sample collected in the same manner as described in Section 3.2.4.3, between excavation nodes 172 and 173. Continue confirmation sampling and excavation away from the contaminated area until the confirmation sample PCB concentration is ≤1 mg/kg. Each additional step out excavation boundary should be located no more than 2 ft west of the previous excavation boundary. Number samples in accordance with instructions provided in IMWP Section 3.2.4.3.
4C	The contamination on the northern edge of this excavation area has not been definitively demonstrated to be less than 1 mg/kg	Sample northern wall of indicated excavation boundary (see IMWP Figure 3-5) using a single composite sample collected in the same manner as described in Section 3.2.4.3, between excavation node 173 and the 715 ft elevation contour. Continue confirmation sampling and excavation away from the contaminated area until the confirmation sample PCB concentration is ≤1 mg/kg. Each additional step out excavation boundary should be located no more than 2 ft north of the previous excavation boundary. Number samples in accordance with instructions provided in IMWP Section 3.2.4.3.

Initial Number of Phase 1 Confirmation Samples = three samples. More samples will be needed if any of the initial confirmation samples contains >1 mg/kg total PCBs.

TABLE 3[1]
PHASE 2 CONFIRMATION SAMPLING LOCATIONS FOR PRESCRIPTIVE PCB REMEDIATION AT SOLID WASTE MANAGEMENT UNIT 17
NSA CRANE
CRANE, INDIANA

Area	Rationale	Additional Sampling
3D	All data south of this area indicates that contamination is limited to elevations less than 652 ft.	Sample south wall of indicated excavation boundary (see IMWP Figure 2-9) using a single composite sample collected in the same manner as described in Section 3.2.4.3, but between soil borings 17SB314 and 17SB140. Continue confirmation sampling and excavation away from the main stream channel until the confirmation sample PCB concentration is ≤1 mg/kg. Each additional step out excavation boundary should be located no more than 1 ft south of the stream channel than the previous boundary.
3F	Western Boundary Composite Sample. The boundary of this area was drawn based on the collection of data in this area that indicates contamination is isolated. To facilitate excavation, however, there is a reasonable chance that the eastern or western boundaries do not encompass all PCB contamination.	Collect one composite sample on the western boundary of the 3F excavation area using the same approach described in IMWP Section 3.2.4.3. See IMWP Figure 3-3 for the location of this sample. Continue confirmation sampling and excavation away from Area 3F until the confirmation sample PCB concentration is ≤1 mg/kg. Each step out excavation boundary should be located 3 feet downstream from where PCB concentrations exceed 1 mg/kg on the western excavation wall.
3F	Eastern Boundary Composite Sample. The boundary of this area was drawn based on the collection of data in this area that indicates contamination is isolated. To facilitate excavation, however, there is a reasonable chance that the eastern or western boundaries do not encompass all PCB contamination.	Collect one composite sample on the eastern boundary of the 3F excavation area using the same approach described in IMWP Section 3.2.4.3. See IMWP Figure 3-3 for the location of this sample. Continue confirmation sampling and excavation away from Area 3F until the confirmation sample PCB concentration is ≤1 mg/kg. Each step out excavation boundary should be located 3 feet upstream from where PCB concentrations exceed 1 mg/kg on the eastern excavation wall.
3L	The southern and eastern boundaries of this area were based on topography and available data.	Collect one composite sample using the same approach described in IMWP Section 3.2.4.3, but on the southern and eastern edges of the excavation boundary shown on IMWP Figures 2-12 and 3-4 (from surface to bedrock depths). Continue confirmation sampling and excavation away from the main stream channel and excavated area until the confirmation sample PCB concentration is ≤1 mg/kg. Each step out excavation boundary should be located 1 ft further from where PCB concentrations exceed 1 mg/kg on the excavation wall.

Area	Rationale	Additional Sampling
3O	The tentative boundary of this area was based on topography and available data but is subject to confirmation sampling.	On the northern and northeastern sidewalls of Area 3O between soil boring 17SB272 and the stream bank (see IMWP Figure 2-13) collect one composite sample using the same approach described in Section 3.2.4.3 and consisting of up to nine grab samples. This one sample will represent PCB concentrations on what are effectively two excavation walls. The grab samples will be collected approximately every 10 ft in a zig-zag pattern along the excavation boundary beginning at boring 17SB272 and extending to the stream channel. If contamination greater than 1 mg/kg is found in this composite sample, excavation will be expanded and additional confirmation sampling will conducted until ≤1 mg/kg total PCBs is demonstrated to exist in the lateral direction in this area. Each step out boundary should be 2 feet further from the previous boundary.
3P	The tentative boundary of this area was based on topography and available data but is subject to confirmation sampling.	On southern and eastern sidewalls of Area 3P between soil boring 17SB234 and the stream bank (see IMWP Figure 2-13) collect one composite sample using the same approach described in Section 3.2.4.3, consisting of up to nine grab samples. This one sample will represent PCB concentrations on what are effectively two excavation walls. The grab samples will be collected approximately every 10 ft in a zig-zag pattern along the excavation boundary beginning at boring 17SB234 and extending to the stream channel. If contamination greater than 1 mg/kg is found in this composite sample, excavation will be expanded and additional confirmation sampling will conducted until ≤1 mg/kg total PCBs is demonstrated to exist in the lateral direction in this area. Each step out boundary should be 2 feet further from the previous boundary.

1. Samples will be numbered according to the convention described in IMWP (March 2013) Section 3.2.4.

Initial Number of Phase 2 Confirmation Samples = six samples. More samples will be needed if any of the initial confirmation samples contains >1 mg/kg total PCBs.

TABLE 4

PRE-DESIGNATED EXCAVATION AND SURVEY NODE NORTHING AND EASTING COORDINATES INTERIM MEASURES, SWMU 17 - PCB CAPACITOR BURIAL / POLE YARD NSA CRANE CRANE, INDIANA (five pages)

Excavation Node	Northing[1]	Easting[1]	Interim Measures Work Plan Excavation Area	IMWP Figure
PHASE 2 EXCAVATION AND SURVEY NODES				
1	1318121.06000	3021459.31000	3A-1	3-1
1a	1318092.72048	3021459.27123	3A-1	3-1
2	1318181.79095	3021539.88743	3A-1, 3A-2	3-1
3	1318229.07050	3021588.60621	3A-2	3-1
4	1318231.79323	3021613.73167	3A-2	3-1
5	1318088.85980	3021482.58282	3A-1	3-1
6	1318097.65840	3021564.95510	3B	3-1
7	1318101.15820	3021525.52920	3B	3-1
8	1318104.34244	3021514.07874	3B	3-1
9	1318130.44450	3021600.79470	3B	3-1
10	1318165.34340	3021608.57260	3B	3-1
11	1318200.16200	3021658.39070	3B	3-1
12	1318225.71160	3021683.53790	3B	3-1
13	1318238.61581	3021687.99312	3B	3-1
14	1318251.10883	3021654.47882	3B	3-1
15	1318244.39540	3021780.76890	3E-1	3-1
15a	1318248.11165	3021830.96797	3E-1	3-1
16	1318245.83000	3021877.81000	3E-1	3-1
17	1318230.13590	3021907.53440	3E-1	3-1
17a	1318204.87100	3021923.70840	3E-1	3-1
18	1318186.90855	3021912.89370	3E-1	3-1
19	1318227.79397	3021772.78953	3C	3-1
20	1318228.57510	3021764.25450	3C	3-1
21	1318184.43459	3021743.23224	3C	3-1
22	1318183.13251	3021757.16453	3C	3-1
23	1318187.68980	3021774.09162	3C	3-1
24	1318155.65855	3021787.24266	3C	3-1
25	1318149.40855	3021794.27391	3C	3-1
26	1318193.80959	3021796.87807	3C	3-1
27	1318193.80959	3021807.42495	3C, 3D-1	3-1
28	1318206.43980	3021807.42495	3C, 3D-1	3-1
29	1318193.02834	3021820.18537	3D-1	3-1

30	1318175.18980	3021857.29474	3D-1	3-1
31	1318168.66080	3021899.02220	3D-1	3-1
32	1318164.25410	3021943.61510	3D-1	3-1
33	1318183.52313	3022000.39370	3D-1	3-1
34	1318107.19590	3022192.60920	3F	3-3
35	1318097.89240	3022221.57010	3F	3-3
36	1318089.29710	3022239.30720	3F	3-3
37	1318073.10644	3022235.21676	3F	3-3
38	1318089.25228	3022184.30530	3F	3-3
39	1318054.26963	3022666.75502	3G	3-4
40	1318032.81900	3022693.29200	3G	3-4
41	1318075.19346	3022761.05642	3G	3-4
42	1318084.52506	3022747.27603	3H	3-4
43	1318093.30930	3022751.16320	3H	3-4
44	1318083.99730	3022789.19940	3H	3-4
45	1318060.54502	3022850.90017	3H, 3I	3-4
46	1318044.26898	3022830.17534	3H, 3I	3-4
47	1318042.42436	3022876.83333	3I	3-4
48	1318050.17480	3022875.32020	3I	3-4
49	1318025.92392	3023009.95968	3J	3-4
50	1318081.90300	3023021.17470	3J	3-4
51	1318104.14200	3023166.25540	3J	3-4
52	1318099.81776	3023226.17216	3J	3-4
53	1318115.18235	3023257.55237	3N	3-4
54	1318132.23964	3023268.35966	3N	3-4
55	1318149.94797	3023286.45862	3N	3-4
56	1318127.43000	3023312.29860	3N	3-4
57	1318139.71120	3023356.86150	3N	3-4
58	1318133.15110	3023361.19820	3N	3-4
58a	1318132.69788	3023378.99582	TSCA stream excavation segment, downstream	3-4
58b	1318156.45037	3023446.97709	TSCA stream excavation segment, upstream	3-4
59	1318114.53130	3023276.56278	3M	3-4
60	1318108.02060	3023277.09360	3M	3-4
61	1318097.56060	3023266.92250	3M	3-4
62	1318100.31620	3023247.82250	3M	3-4
63	1318081.34930	3023235.47340	3M, 3L	3-4
64	1318090.31255	3023221.61487	3M, 3L	3-4
65	1318063.88026	3023235.54716	3L	3-4
66	1318029.50526	3023207.03153	3L	3-4

67	1318026.64068	3023182.55237	3L, 3K	3-4
68	1318035.10422	3023181.64091	3L, 3K	3-4
69	1318046.43235	3023095.96383	3K	3-4
70	1318015.96360	3023096.22424	3K	3-4
71	1318185.91990	3023569.38040	3O	3-4
72	1318230.97995	3023621.77575	3O	3-4
73	1318219.91224	3023631.21586	3O	3-4
73a	1318202.36534	3023609.52961	TSCA ditch segment downstream	3-4
74	1318215.68047	3023635.44763	3P	3-4
75	1318201.43670	3023620.66380	3P	3-4
76	1318161.31849	3023604.84867	3P	3-4
77	1318170.97561	3023591.82784	3P	3-4
PHASE 1 EXCAVATION AND SURVEY NODES				
78	1318141.98810	3023689.16960	4D	3-4
79	1318147.33190	3023702.80030	4D	3-4
80	1318131.17090	3023710.34730	4D	3-4
81	1318127.62020	3023691.59020	4D	3-4
82	1317782.10977	3021987.47334	4A-1	3-5, 3-6
83	1317815.90242	3022011.52857	4A-1	3-5, 3-6
84	1317816.17502	3022017.98237	4A-1, 4A-6	3-5, 3-6
85	1317775.57941	3022018.24809	4A-1, 4A-6	3-5, 3-6
86	1317768.91131	3022018.04977	4A-1, 4A-6	3-5, 3-6
87	1317816.78464	3022032.41479	4A-6	3-5, 3-6
88	1317814.47862	3022047.52221	4A-6	3-5, 3-6
89	1317812.39768	3022061.15500	4A-6	3-5, 3-6
90	1317809.52288	3022079.98861	4A-6	3-5, 3-6
91	1317803.32369	3022097.99232	4A-5, 4A-6	3-5, 3-6
92	1317764.12298	3022097.88988	4A-5, 4A-6	3-5, 3-6
93	1317760.37897	3022090.89125	4A-3, 4A-5, 4A-6	3-5, 3-6
94	1317747.59813	3022067.00012	4A-2, 4A-6	3-5, 3-6
95	1317749.69719	3022066.42765	4A-2, 4A-6	3-5, 3-6
96	1317778.83809	3022061.44601	4A-6	3-5, 3-6
97	1317778.09156	3022047.75851	4A-6	3-5, 3-6
98	1317766.09590	3022027.90434	4A-2, 4A-6	3-5, 3-6
99	1317765.72408	3022034.47614	4A-6	3-5, 3-6
100	1317741.18418	3022031.47556	4A-2, 4A-3	3-5, 3-6
101	1317732.47814	3022071.20986	4A-2, 4A-3	3-5, 3-6
102	1317721.31200	3022083.53200	4A-3, 4A-4	3-5, 3-6
103	1317736.85696	3022094.18846	4A-3, 4A-4	3-5, 3-6
104	1317734.88800	3022111.78300	4A-3, 4A-4, 4A-5	3-5, 3-6
105	1317717.89000	3022112.96000	4A-5, 4A-4, 4A-10	3-5, 3-6

106	1317715.26900	3022123.55400	4A-5, 4A-10	3-5, 3-6
107	1317699.57400	3022120.80800	4A-5, 4A-10	3-5, 3-6
108	1317700.61367	3022105.11200	4A-5, 4A-10	3-5, 3-6
109	1317711.05540	3022113.36260	4A-4, 4A-10	3-5, 3-6
110	1317676.79867	3022095.40800	4A-5	3-5, 3-6
111	1317664.76640	3022086.87140	4A-5	3-5, 3-6
112	1317654.56670	3022086.87140	4A-5, 4A-7	3-5, 3-6
113	1317657.38310	3022095.07520	4A-5, 4A-7	3-5, 3-6
114	1317656.11211	3022108.77966	4A-5, 4A-7	3-5, 3-6
115	1317644.25860	3022108.57280	4A-5, 4A-7	3-5, 3-6
116	1317634.27597	3022116.92784	4A-5, 4A-7	3-5, 3-6
117	1317634.33182	3022118.21034	4A-5	3-5, 3-6
118	1317671.82092	3022123.77704	4A-5	3-5, 3-6
119	1317700.50287	3022134.89960	4A-5	3-5, 3-6
120	1317720.76318	3022152.14074	4A-5	3-5, 3-6
121	1317732.83789	3022167.98462	4A-5	3-5, 3-6
122	1317742.34400	3022144.35000	4A-5	3-5, 3-6
123	1317756.15630	3022143.25850	4A-5	3-5, 3-6
124	1317756.31320	3022110.07560	4A-5	3-5, 3-6
125	1317777.18241	3022108.95530	4A-5	3-5, 3-6
126	1317799.71280	3022108.47906	4A-5	3-5, 3-6
127	1317625.70392	3022087.52245	4A-7, 4A-9	3-5, 3-6
128	1317613.59450	3022097.15780	4A-7, 4A-9	3-5, 3-6
129	1317624.20371	3022118.75994	4A-7, 4A-9	3-5, 3-6
130	1317592.49311	3022127.75146	4A-7, 4A-8	3-5, 3-6
131	1317593.36885	3022097.39659	4A-7, 4A-8	3-5, 3-6
132	1317599.67260	3022087.83210	4A-7, 4A-8	3-5, 3-6
133	1317613.76810	3022076.88870	4A-8, 4A-9	3-5, 3-6
134	1317592.82630	3022076.67170	4A-8	3-5, 3-6
135	1317588.62736	3022065.41404	4A-8	3-5, 3-6
136	1317586.93600	3022065.40800	4A-8	3-5, 3-6
137	1317573.18656	3022076.34624	4A-8	3-5, 3-6
138	1317573.51208	3022097.17957	4A-8	3-5, 3-6
139	1317582.19263	3022108.89832	4A-8	3-5, 3-6
140	1317666.09184	3022177.10423	4B-1	3-5
141	1317684.12037	3022175.20940	4B-1	3-5
142	1317711.99540	3022194.02730	4B-1	3-5
143	1317713.62030	3022210.04510	4B-1	3-5
144	1317720.99035	3022210.83312	4B-1	3-5
145	1317719.27589	3022231.28118	4B-1	3-5
146	1317715.33252	3022261.62290	4B-1, 4B-2	3-5

147	1317701.23100	3022258.37700	4B-1, 4B-2	3-5
148	1317691.03640	3022270.56230	4B-1, 4B-2	3-5
149	1317695.10400	3022288.11900	4B-1, 4B-2	3-5
150	1317711.16042	3022289.79889	4B-1, 4B-2	3-5
151	1317703.91107	3022332.39760	4B-1, 4B-50	3-5
152	1317701.83000	3022332.40000	4B-1, 4B-50	3-5
153	1317681.73180	3022340.71160	4B-1, 4B-50	3-5
154	1317673.40590	3022368.74000	4B-1, 4B-50	3-5
155	1317687.22220	3022370.66510	4B-3, 4B-50	3-5
156	1317695.86400	3022380.50717	4B-3, 4B-50	3-5
157	1317693.97394	3022392.45813	4B-3	3-5
158	1317686.55100	3022393.04800	4B-3	3-5
159	1317683.72720	3022382.24390	4B-3	3-5
160	1317662.29198	3022358.80388	4B-1	3-5
161	1317658.94359	3022350.76774	4B-1	3-5
162	1317654.51100	3022341.22200	4B-1	3-5
163	1317660.25500	3022312.24500	4B-1	3-5
164	1317646.72180	3022309.76473	4B-1	3-5
165	1317720.06300	3022387.28300	4C	3-5
166	1317717.39782	3022386.82238	4C	3-5
167	1317729.69700	3022377.21900	4C	3-5
168	1317724.85780	3022353.73851	4C	3-5
169	1317747.52800	3022345.71580	4C	3-5
170	1317757.72730	3022347.87980	4C	3-5
171	1317763.01400	3022359.60400	4C	3-5
172	1317788.67200	3022379.64500	4C	3-5
173	1317826.15593	3022400.49814	4C	3-5
174	1317822.48479	3022456.96307	4C	3-5
175	1317799.65407	3022441.63050	4C	3-5
176	1317720.11660	3022431.02100	4C	3-5
177	1317711.47157	3022412.48840	4C	3-5
178	1317714.95350	3022412.48840	4C	3-5
179	1317569.05035	3022035.33793	8a	3-5
180	1317264.88368	3021766.58793	8b	3-5
181	1317163.14757	3021669.01848	8b	3-5

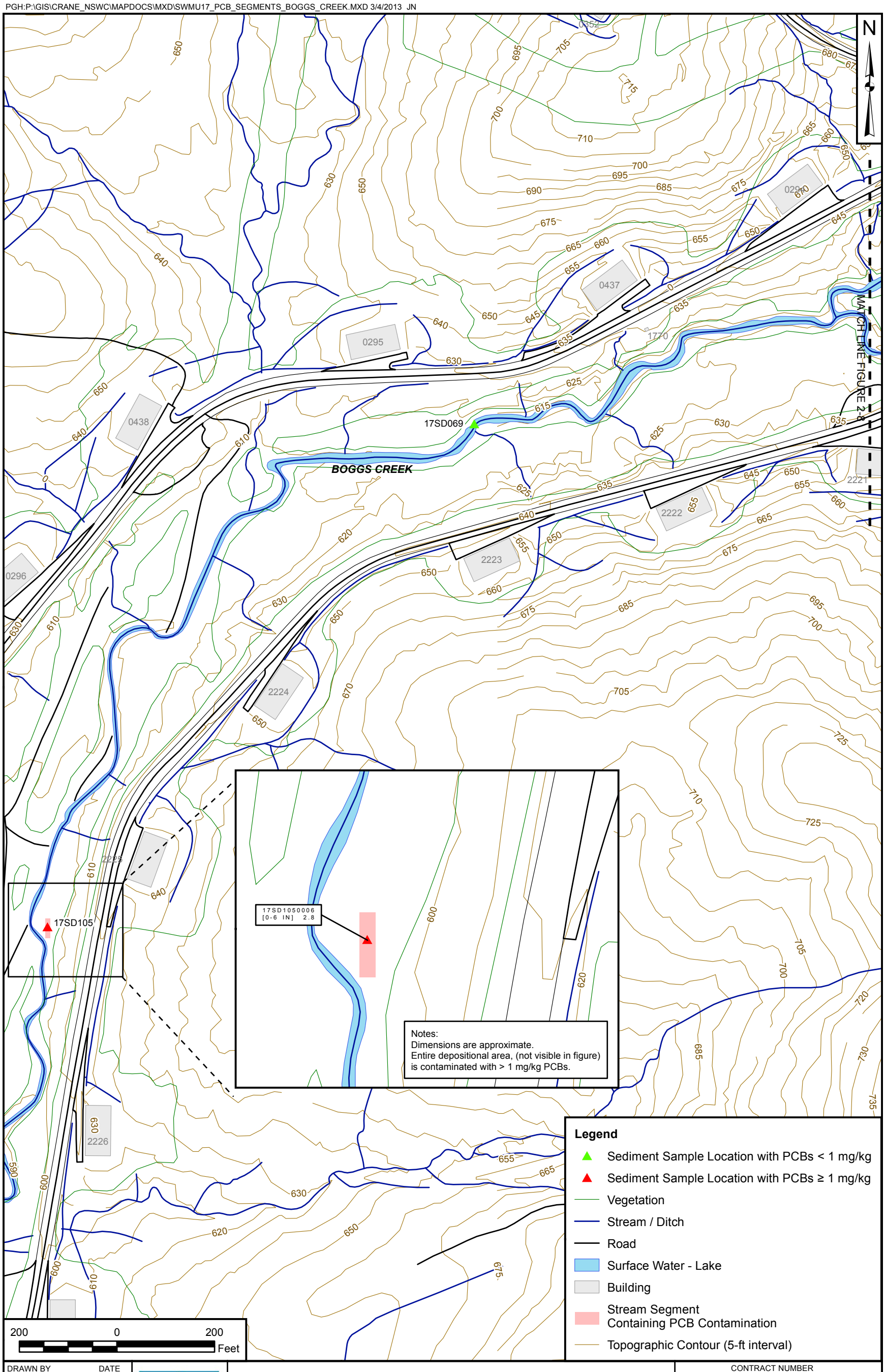
1 Survey Datums are: Horizontal = North American Datum of 1983 (NAD 83); Vertical = North American Vertical Datum 1988 (NAVD 88).

TABLE 5

SAMPLING PLAN HISTORY PRIOR TO APRIL 5 2013 FTMR
SOLID WASTE MANAGEMENT UNIT 17
NSA CRANE
CRANE, INDIANA

Document Issue Date	Document Title
December, 2001	Quality Assurance Project Plan for PCB Capacitor Burial/Pole Yard Solid Waste Management Unit (SWMU) 17 Resource Conservation and Recovery Act Facility Investigation and Verification
June, 2005	Quality Assurance Project Plan Addendum for PCB Capacitor Burial/Pole Yard Solid Waste Management Unit (SWMU) 17/04. Resource Conservation and Recovery Act Facility Investigation and Verification of Removal. Naval Surface Warfare Center, Crane
April, 2006	Quality Assurance Project Plan Addendum 2 for PCB Capacitor Burial/Pole Yard SWMU 17. Naval Surface Warfare Center, Crane. Crane, Indiana,
September, 2006	Quality Assurance Project Plan Addendum 3 for Building 2721 Investigation (Phase 4) PCB Capacitor Burial/Pole Yard SWMU 17. Naval Surface Warfare Center, Crane. Crane, Indiana
August, 2008	Quality Assurance Project Plan Addendum No. 4 For PCB Capacitor Burial/Pole Yard Building 2721 Investigation (Phase 5) SWMU 17, Naval Surface Warfare Center Crane, Crane, Indiana
April, 2012	Technical Memorandum, Prescriptive Remediation Sampling and Analysis for SWMU 17 - PCB Capacitor Burial/Pole Yard, Naval Support Activity Crane, Indiana
April to September 2012	Multiple Field Task Modification Requests (FTMRs). These FTMRs are documented in the: Report for Additional Investigation In Support of Prescriptive PCB Remediation at Solid Waste Management (SWMU) 17 - PCB Capacitor Burial/Pole Yard, Naval Support Activity Crane, Indiana. This report is currently in draft form and is dated March 2013.

PGH:P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU17_PCB_SEGMENTS_BOGGS_CREEK.MXD 3/4/2013 JN



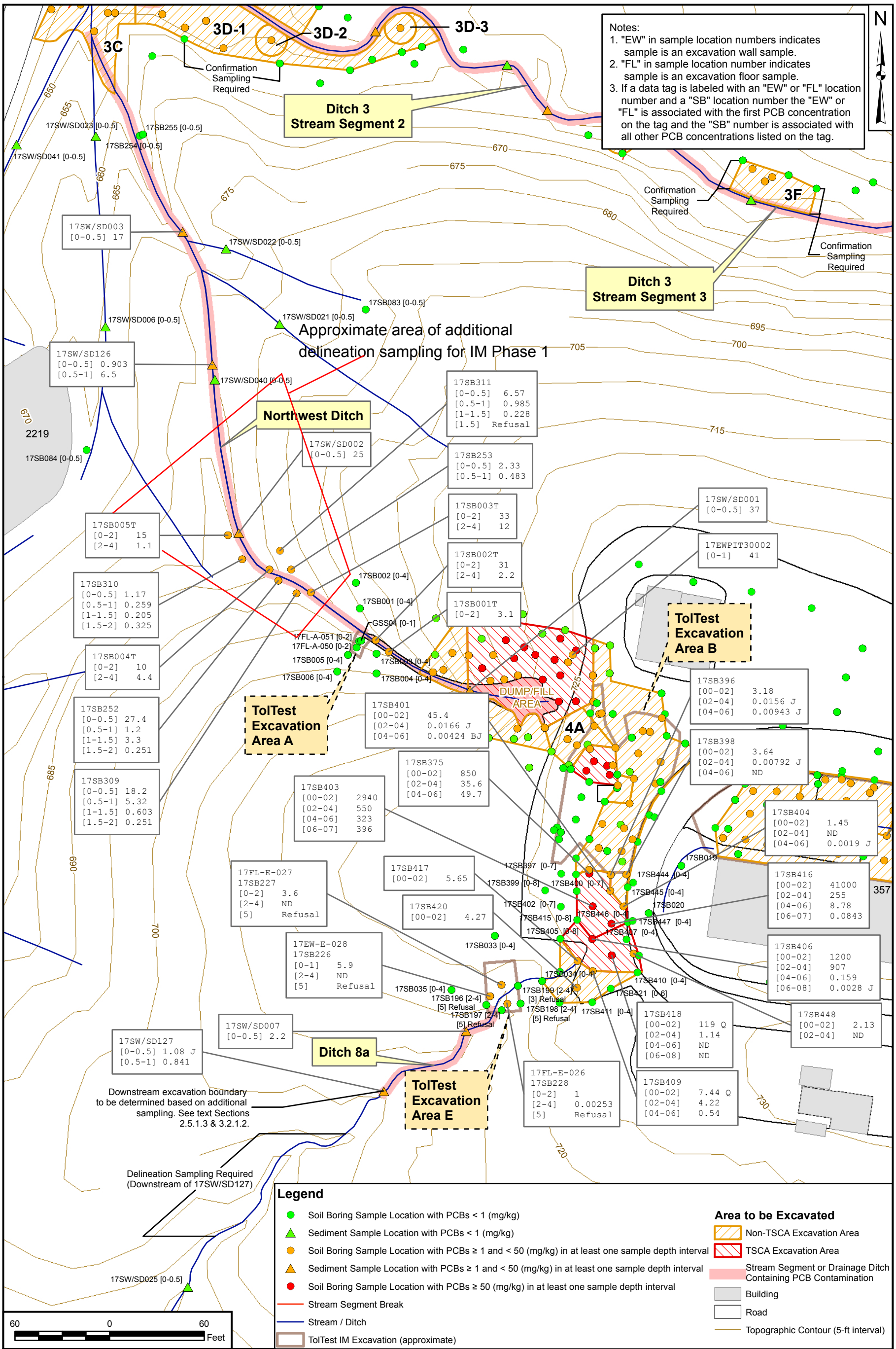
DRAWN BY	DATE
J. ENGLISH	06/18/10
CHECKED BY	DATE
T. JOHNSTON	06/20/12
REVISED BY	DATE
J. NOVAK	06/20/12
SCALE	
AS NOTED	

NAVFAC

EXTENT OF CONTAMINATION NEAR SEDIMENT SAMPLING LOCATION 17SD105
SWMU 17 - PCB CAPACITOR BURIAL/POLE YARD
INTERIM MEASURES WORK PLAN
NSA CRANE
CRANE, INDIANA

CONTRACT NUMBER	
CTO F271	
APPROVED BY	DATE
—	—
APPROVED BY	DATE
—	—
FIGURE NO. 2-5	REV 0

PGH:P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU17_PCB_10-A_FINAL.MXD 3/4/2013 JN



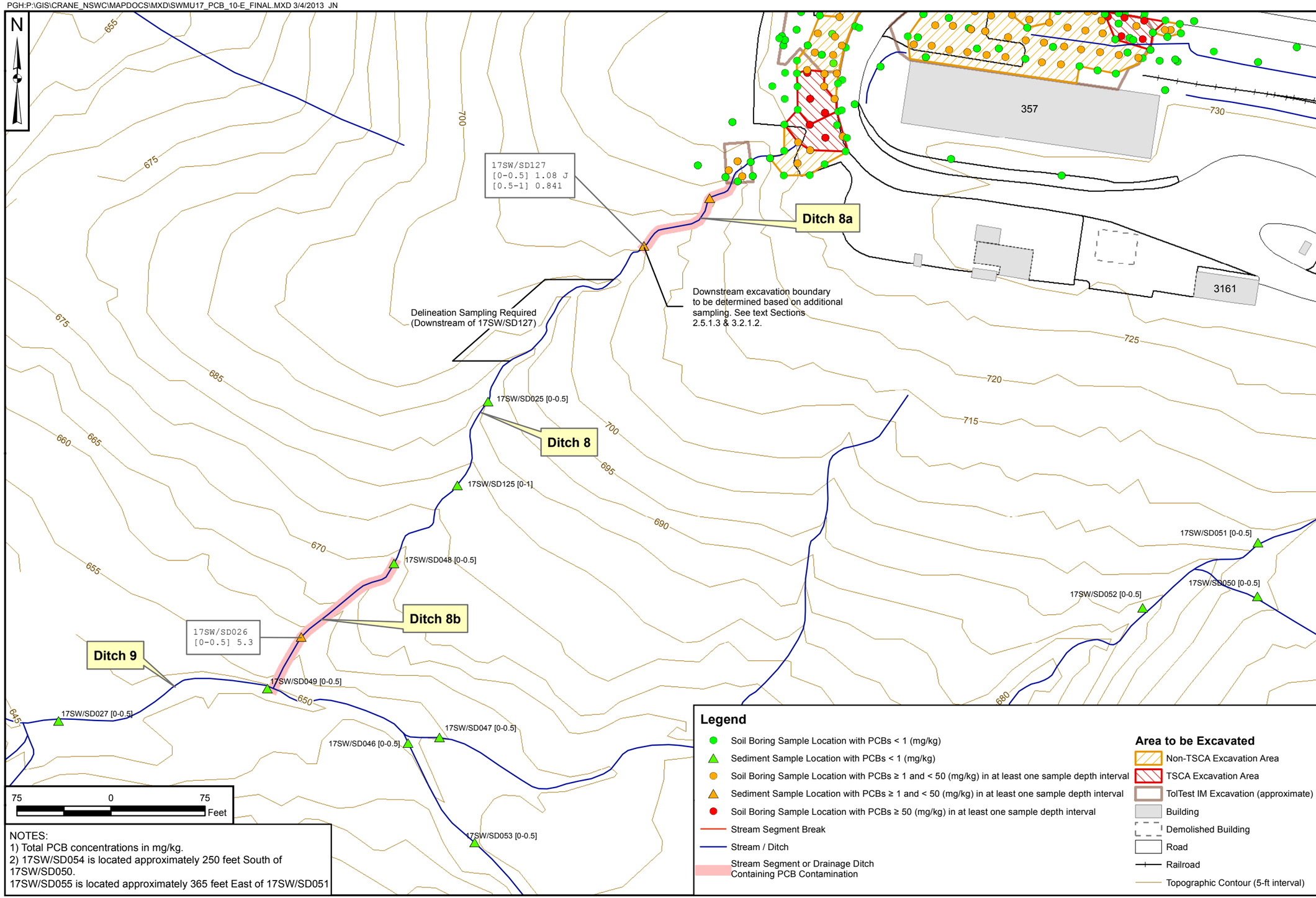
DRAWN BY	DATE
J. NOVAK	5/24/2012
CHECKED BY	DATE
T. JOHNSTON	3/4/2013
REVISED BY	DATE
J. NOVAK	3/4/2013
SCALE	
AS NOTED	

NAVFAC

2005-06-11-12 TOTAL PCB CONCENTRATIONS GREATER THAN 1 mg/kg
SWMU 17 - PCB CAPACITOR BURIAL/POLE YARD
INTERIM MEASURES WORK PLAN
NSA CRANE
CRANE, INDIANA

CONTRACT NUMBER	CTO NUMBER
—	F271
APPROVED BY	DATE
—	—
APPROVED BY	DATE
—	—
FIGURE NO. 2-6	REV 0

PGH:P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU17_PCB_10-E_FINAL.MXD 3/4/2013 JN



NOTES:
1) Total PCB concentrations in mg/kg.
2) 17SW/SD054 is located approximately 250 feet South of 17SW/SD050.
17SW/SD055 is located approximately 365 feet East of 17SW/SD051

CONTRACT NUMBER
CTO F271

APPROVED BY — DATE —

APPROVED BY — DATE —

FIGURE NO. 2-7

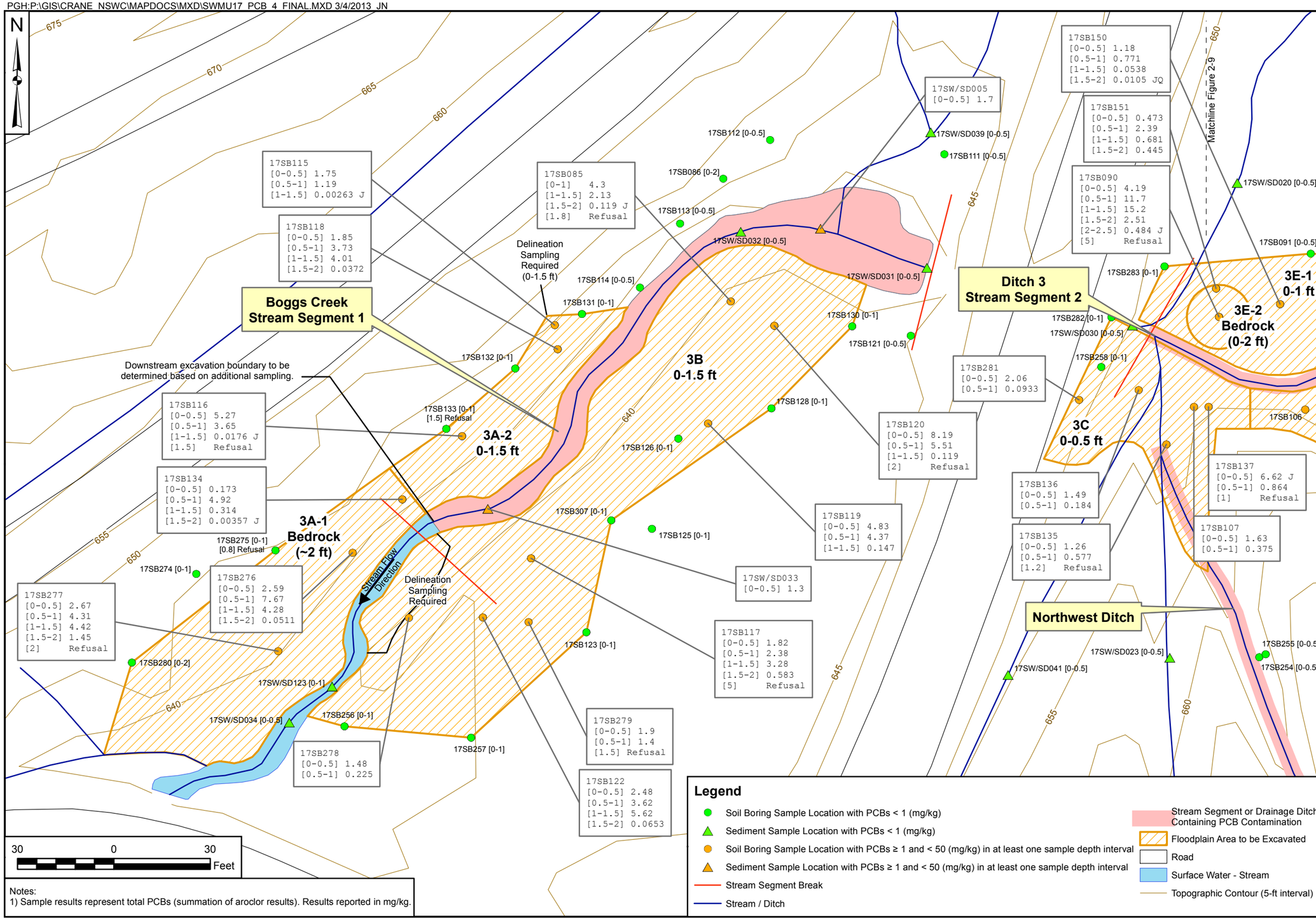
REV 0

2005-06-11-12 PCB CONCENTRATIONS IN DITCH 8
SWMU 17 - PCB CAPACITOR BURIAL/POLE YARD
INTERIM MEASURES WORK PLAN
NSA CRANE
CRANE, INDIANA

NAVFAC

DRAWN BY J. NOVAK	DATE 5/31/2012	
CHECKED BY T. JOHNSTON	DATE 3/4/2013	
REVISED BY J. NOVAK	DATE 3/4/2013	SCALE AS NOTED

PGH:P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU17_PCB_4_FINAL.MXD 3/4/2013 JN



Notes:
1) Sample results represent total PCBs (summation of aroclor results). Results reported in mg/kg.

CONTRACT NUMBER CTO F271

APPROVED BY — DATE —

APPROVED BY — DATE —

FIGURE NO. 2-8

REV 0

2005-06-11-12 SAMPLE RESULTS-STREAM SEGMENT 1
SWMU 17 - PCB CAPACITOR BURIAL/POLE YARD
INTERIM MEASURES WORK PLAN
NSA CRANE
CRANE, INDIANA

NAVFAC

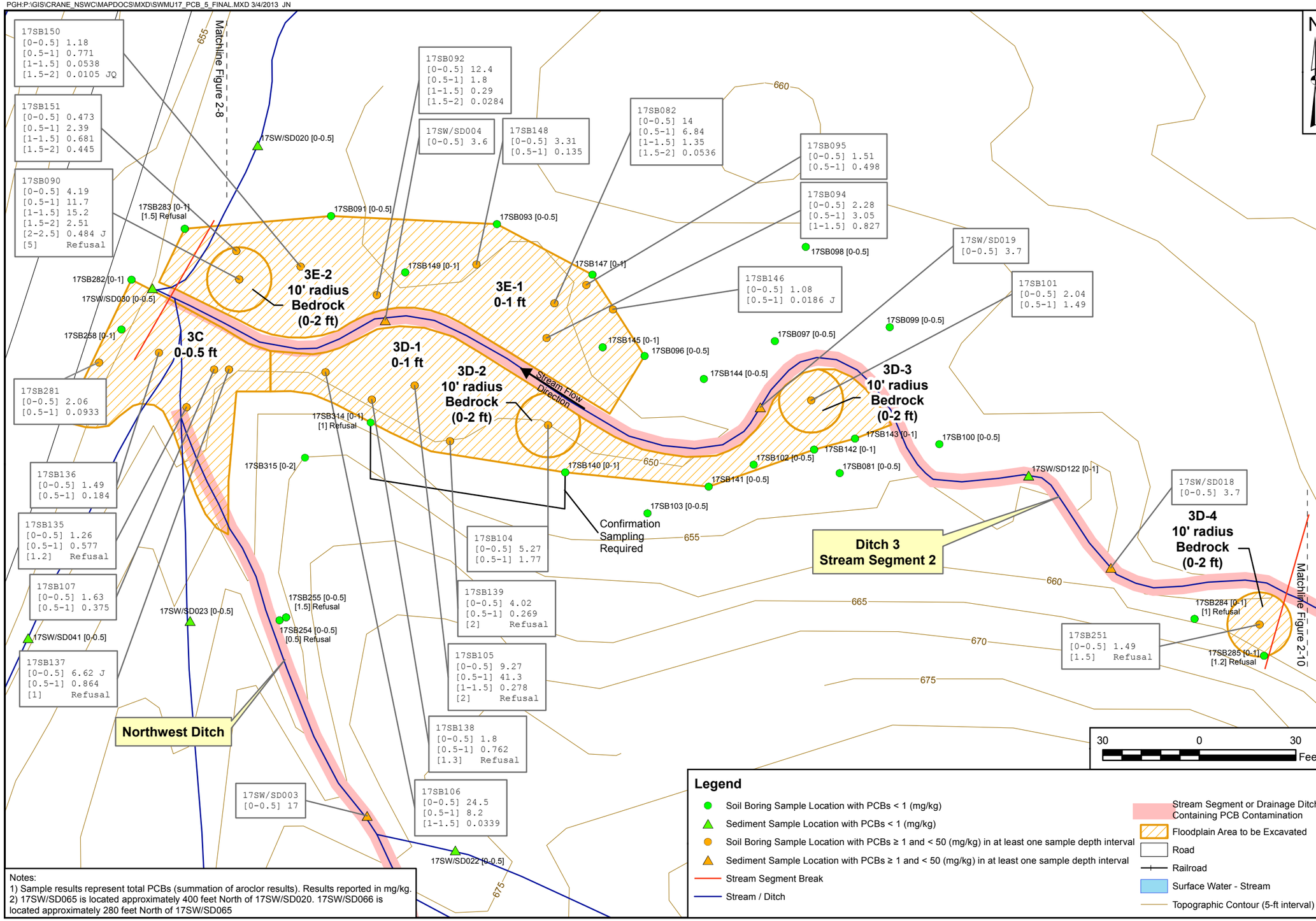
DRAWN BY J. NOVAK DATE 5/15/2012

CHECKED BY T. JOHNSTON DATE 3/4/2013

REVISED BY J. NOVAK DATE 3/4/2013

SCALE AS NOTED

PGH:P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU17_PCB_5_FINAL.MXD 3/4/2013 JN



Notes:
1) Sample results represent total PCBs (summation of aroclor results). Results reported in mg/kg.
2) 17SW/SD065 is located approximately 400 feet North of 17SW/SD020. 17SW/SD066 is located approximately 280 feet North of 17SW/SD065

CONTRACT NUMBER
CTO F271

APPROVED BY — DATE —

APPROVED BY — DATE —

FIGURE NO. 2-9

REV 0

2005-06-11-12 SAMPLE RESULTS - STREAM SEGMENT 2
SWMU 17 - PCB CAPACITOR BURIAL/POLE YARD
INTERIM MEASURES WORK PLAN
NSA CRANE
CRANE, INDIANA

NAVFAC

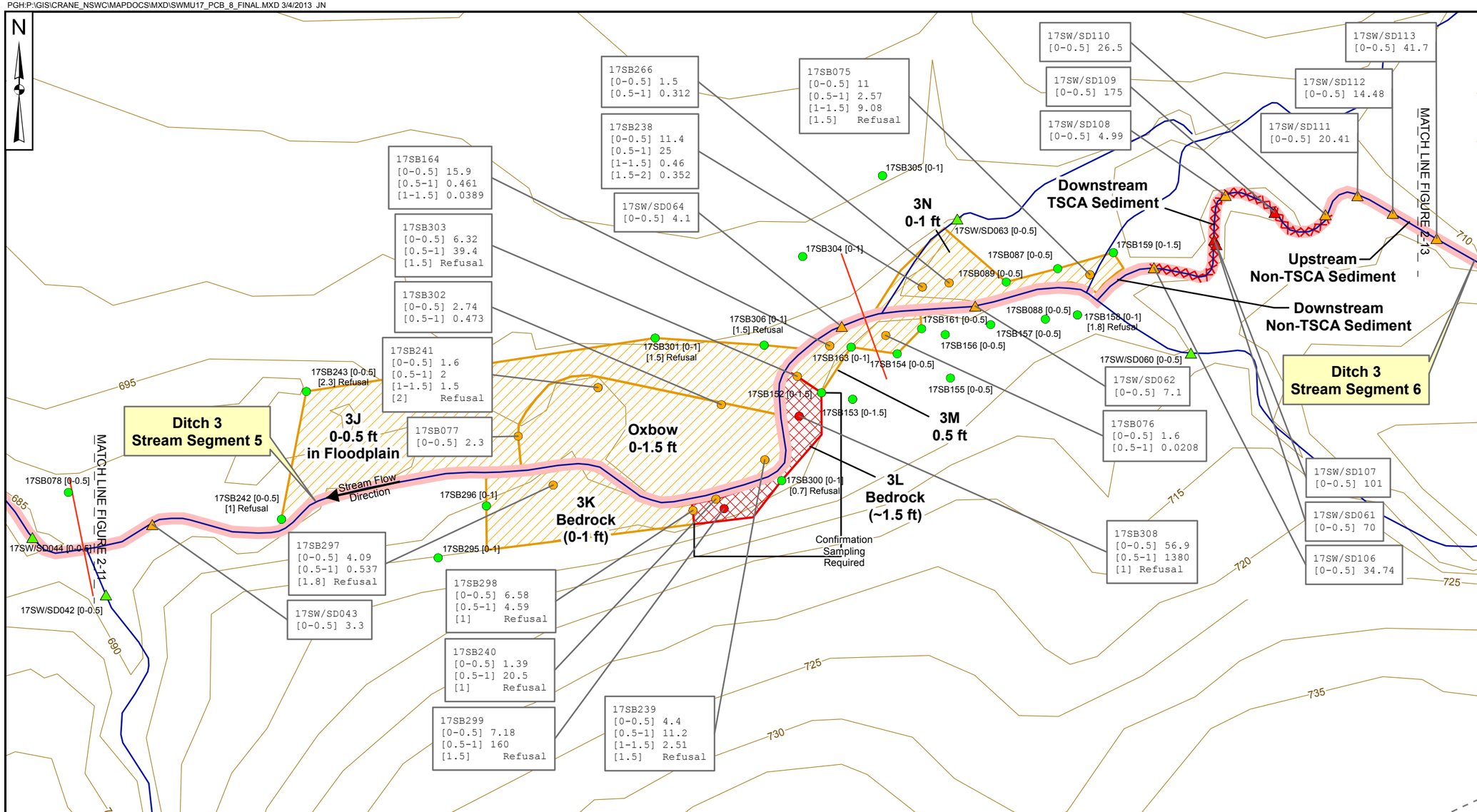
DRAWN BY J. NOVAK DATE 5/24/2012

CHECKED BY T. JOHNSTON DATE 3/4/2013

REVISED BY J. NOVAK DATE 3/4/2013

SCALE AS NOTED

PGH:P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU17_PCB_8_FINAL.MXD 3/4/2013 JN



Legend

- Soil Boring Sample Location with PCBs < 1 (mg/kg)
- Sediment Sample Location with PCBs < 1 (mg/kg)
- Soil Boring Sample Location with PCBs ≥ 1 and < 50 (mg/kg) in at least one sample depth interval
- Sediment Sample Location with PCBs ≥ 1 and < 50 (mg/kg) in at least one sample depth interval
- Soil Boring Sample Location with PCBs ≥ 50 (mg/kg) in at least one sample depth interval
- Sediment Sample Location with PCBs ≥ 50 (mg/kg) in at least one sample depth interval
- Stream Segment Break
- Stream / Ditch
- Stream Segment or Drainage Ditch Containing PCB Contamination

Area to be Excavated

- Non-TSCA Floodpplain Excavation Area
- TSCA Excavation Area
- Building
- Demolished Building
- Road
- Topographic Contour (5-ft interval)

Notes:
1) Sample results represent total PCBs (summation of aroclor results). Results reported in mg/kg.

CONTRACT NUMBER
CTO F271

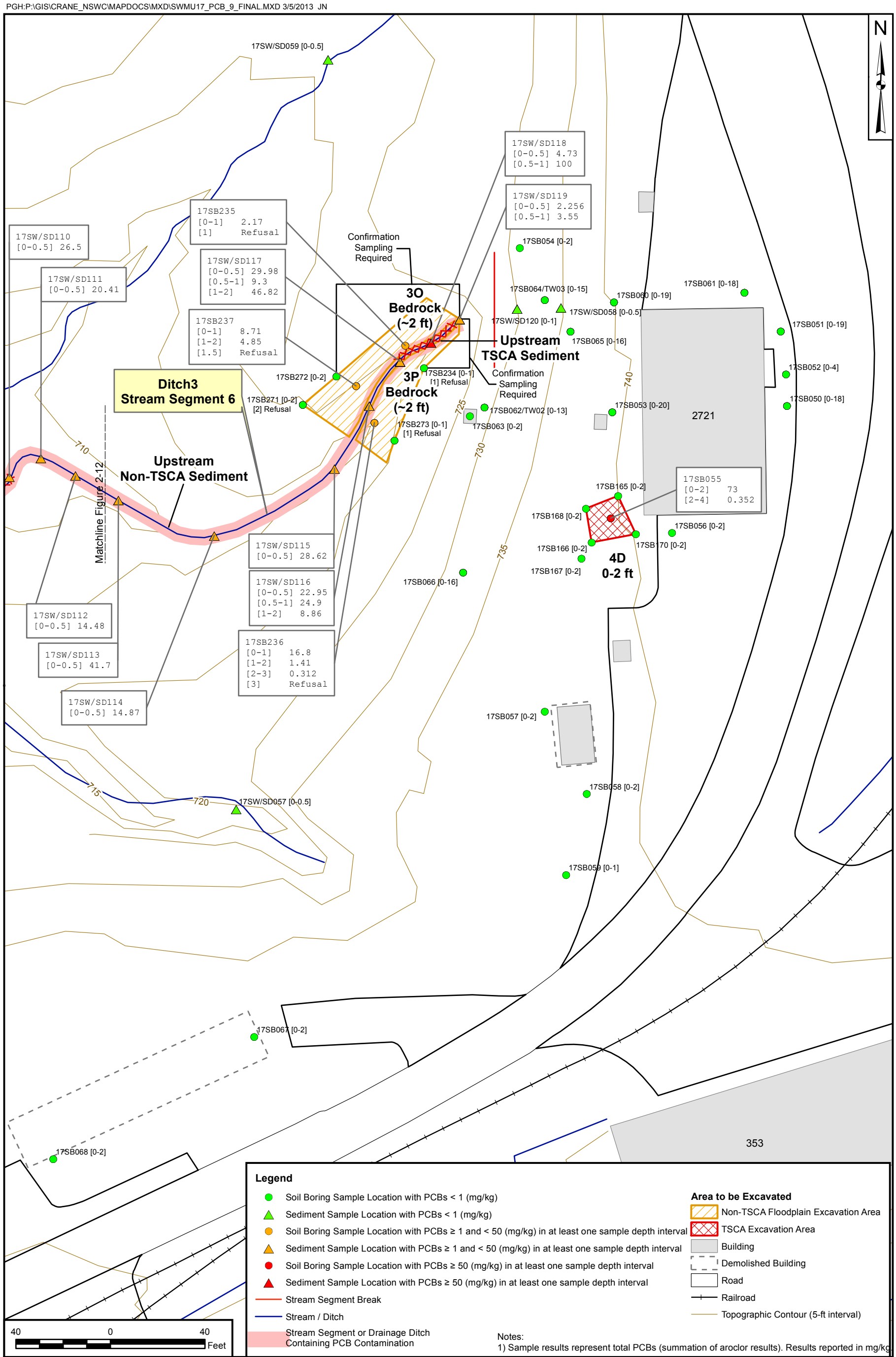
APPROVED BY — DATE —
APPROVED BY — DATE —
FIGURE NO. 2-12
REV 0

2005-06-11-12 SAMPLE RESULTS - STREAM SEGMENTS 5 AND 6
SWMU 17 - PCB CAPACITOR BURIAL/POLE YARD
INTERIM MEASURE WORK PLAN
NSA CRANE
CRANE, INDIANA

NAVFAC

DRAWN BY J. NOVAK DATE 5/24/2012
CHECKED BY T. JOHNSTON DATE 3/4/2013
REVISED BY J. NOVAK DATE 3/4/2013
SCALE AS NOTED

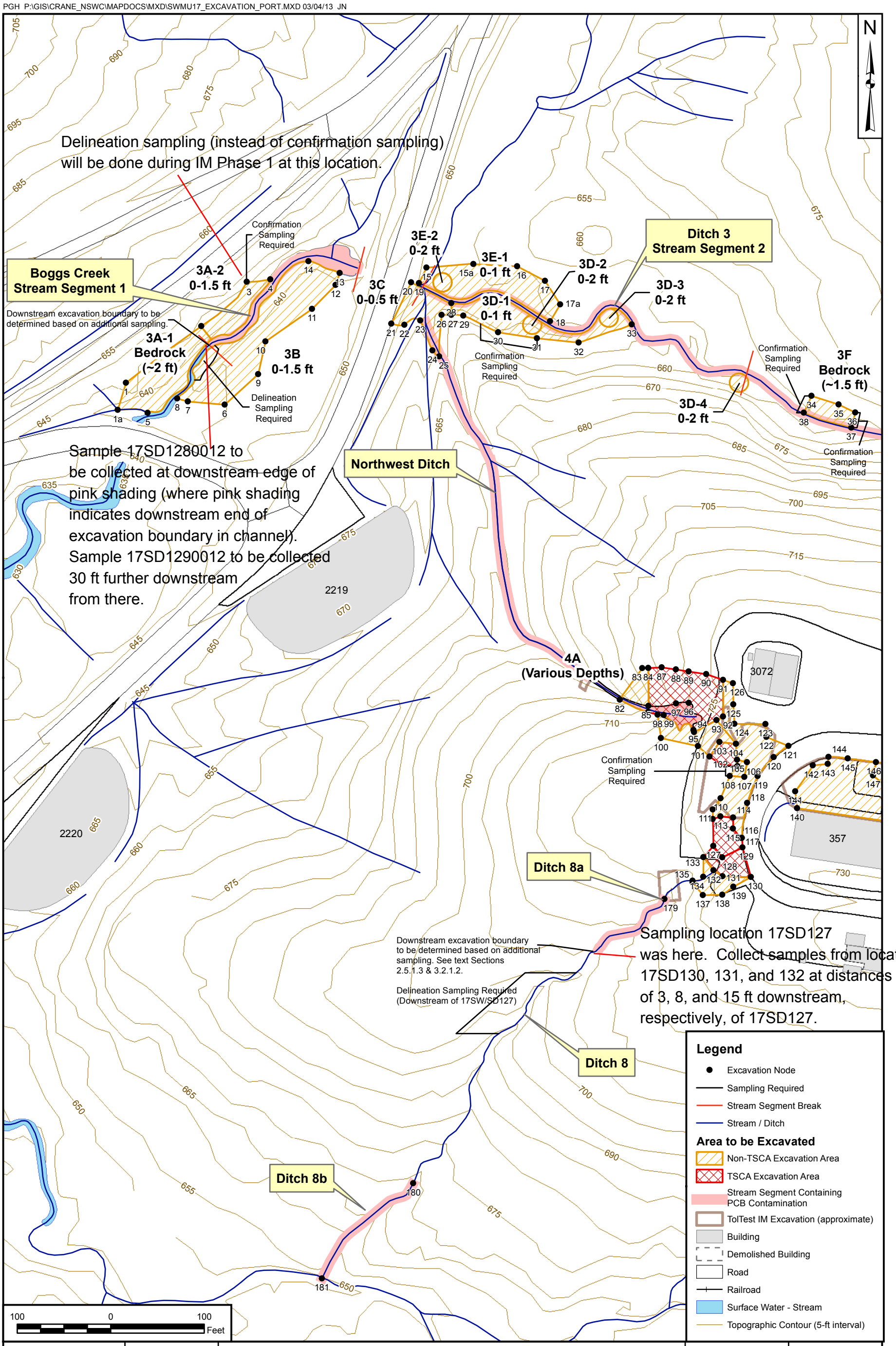
PGH:P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU17_PCB_9_FINAL.MXD 3/5/2013 JN



Notes:
1) Sample results represent total PCBs (summation of aroclor results). Results reported in mg/kg

DRAWN BY J. NOVAK	DATE 5/24/2012	2005-06-11-12 SAMPLE RESULTS - STREAM SEGMENT 6 SWMU 17 - PCB CAPACITOR BURIAL/POLE YARD INTERIM MEASURES WORK PLAN NSA CRANE CRANE, INDIANA	CONTRACT NUMBER ___ / CTO NUMBER F271
CHECKED BY T. JOHNSTON	DATE 3/5/2013		APPROVED BY ___ / DATE ___
REVISED BY J. NOVAK	DATE 3/5/2013		APPROVED BY ___ / DATE ___
SCALE AS NOTED			FIGURE NO. 2-13 / REV 0

PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU17_EXCAVATION_PORT.MXD 03/04/13 JN



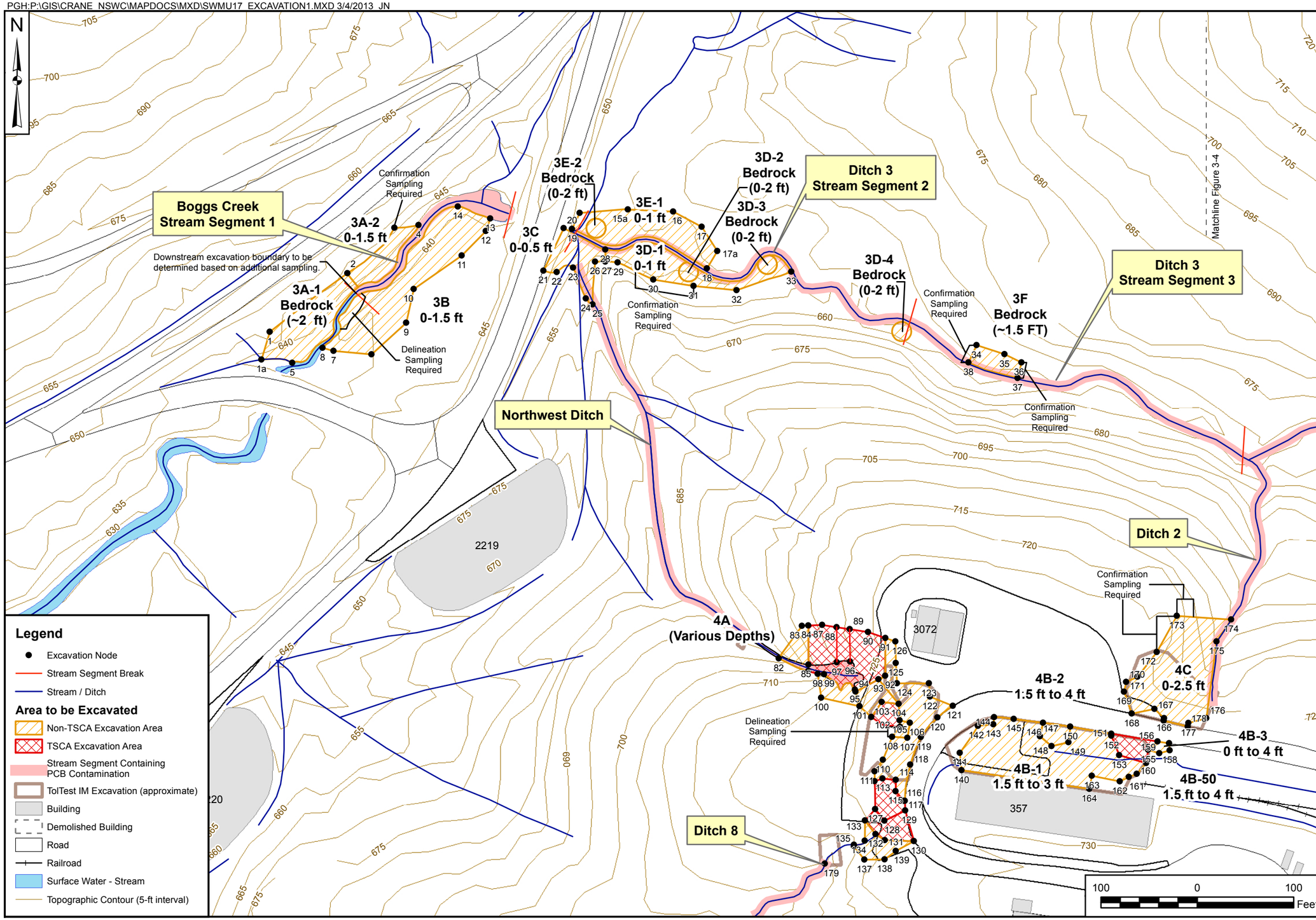
DRAWN BY	DATE
J. NOVAK	06/21/12
CHECKED BY	DATE
T. JOHNSTON	03/04/13
REVISED BY	DATE
J. NOVAK	03/04/13
SCALE	
AS NOTED	

NAVFAC

EXTENT OF SEDIMENT EXCAVATION IN NORTHWEST DITCH AND DITCH 8
SWMU 17 - PCB CAPACITOR BURIAL/POLE YARD
INTERIM MEASURES WORK PLAN
NSA CRANE
CRANE, INDIANA

CONTRACT NUMBER	CTO NUMBER
—	—
APPROVED BY	DATE
—	—
APPROVED BY	DATE
—	—
FIGURE NO. 3-1	REV 0

PGH:P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU17_EXCAVATION1.MXD 3/4/2013 JN



CONTRACT NUMBER
CTO F271

APPROVED BY — DATE —

APPROVED BY — DATE —

FIGURE NO. 3-3

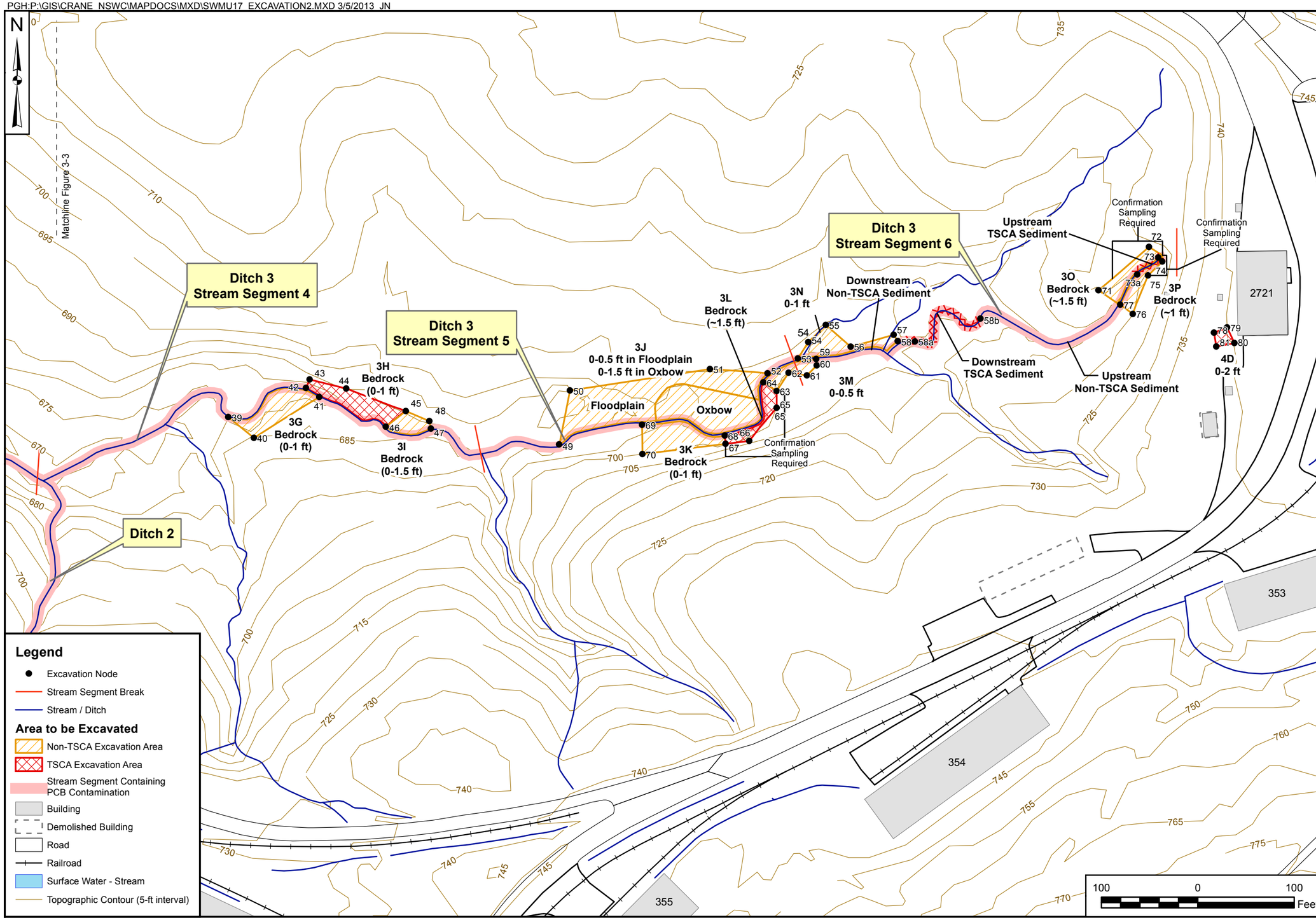
REV 0

EXTENT OF SEDIMENT AND SOIL EXCAVATION IN DITCH 3
STREAM SEGMENTS 1 THROUGH 3 AND TOLTEST EXCAVATION AREA
SWMU 17 - PCB CAPACITOR BURIAL/POLE YARD
INTERIM MEASURES WORK PLAN
NSA CRANE
CRANE, INDIANA

NAVFAC

DRAWN BY J. NOVAK	DATE 5/15/2012	SCALE AS NOTED
CHECKED BY T. JOHNSTON	DATE 3/4/2013	
REVISED BY J. NOVAK	DATE 3/4/2013	

PGH:P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU17_EXCAVATION2.MXD 3/5/2013 JN



CONTRACT NUMBER
CTO F271

APPROVED BY — DATE —

APPROVED BY — DATE —

FIGURE NO. 3-4

REV 0

EXTENT OF SEDIMENT AND SOIL EXCAVATION IN DITCH 3
STREAM SEGMENTS 4 THROUGH 6 AND AREA 4D
SWMU 17 - PCB CAPACITOR BURIAL/POLE YARD
INTERIM MEASURES WORK PLAN
NSA CRANE
CRANE, INDIANA

NAVFAC

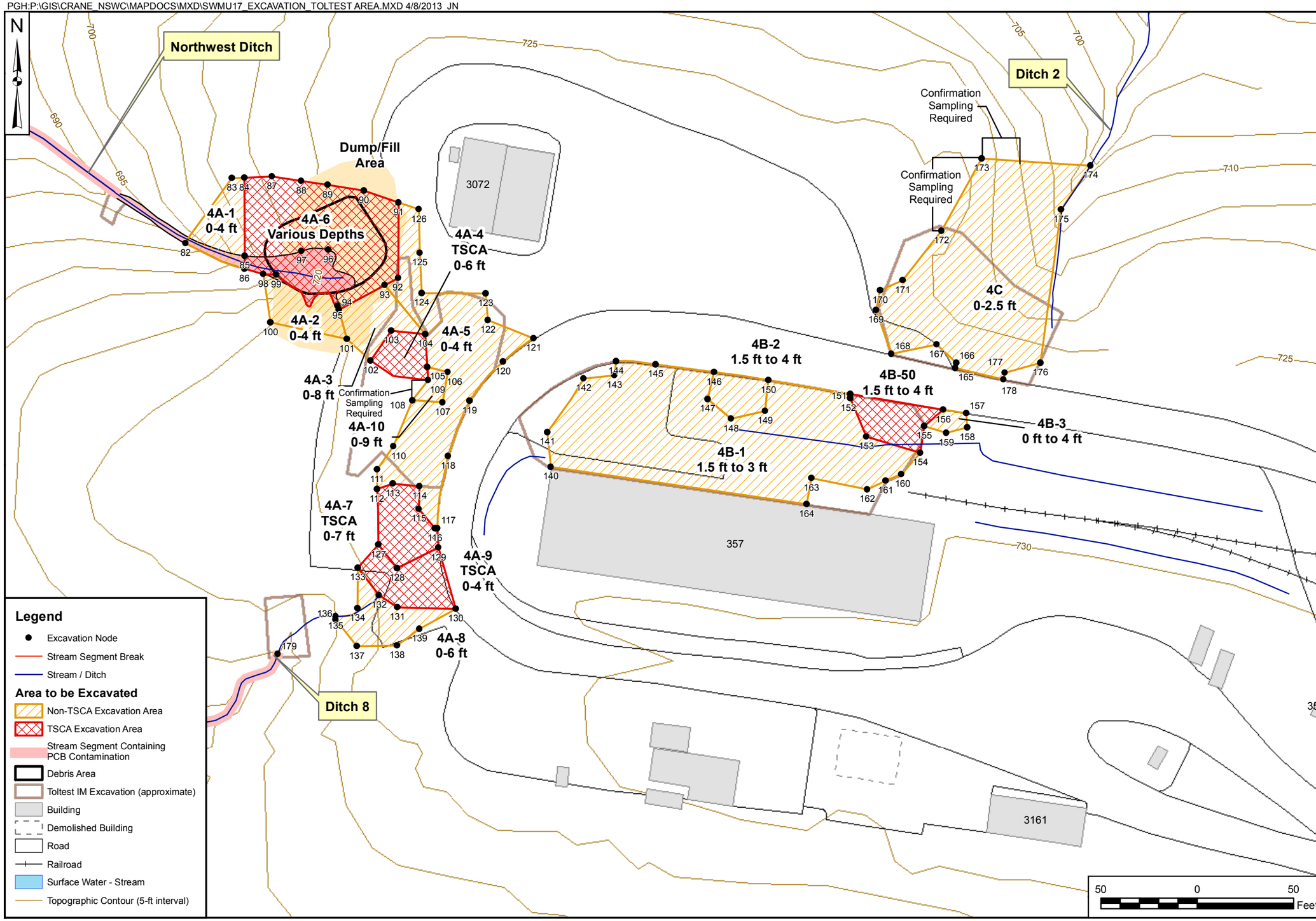
DRAWN BY J. NOVAK DATE 5/15/2012

CHECKED BY T. JOHNSTON DATE 3/5/2013

REVISED BY J. NOVAK DATE 3/5/2013

SCALE AS NOTED

PGH:P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU17_EXCAVATION_TOLTEST AREA.MXD 4/8/2013 JN



CONTRACT NUMBER
CTO F271

APPROVED BY — DATE —

APPROVED BY — DATE —

FIGURE NO. 3-5

REV 1

EXTENT OF SEDIMENT AND SOIL EXCAVATION AT
AREAS 4A, 4B AND 4C
SWMU 17 - PCB CAPACITOR BURIAL/POLE YARD
INTERIM MEASURES WORK PLAN
NSA CRANE
CRANE, INDIANA

NAVFAC

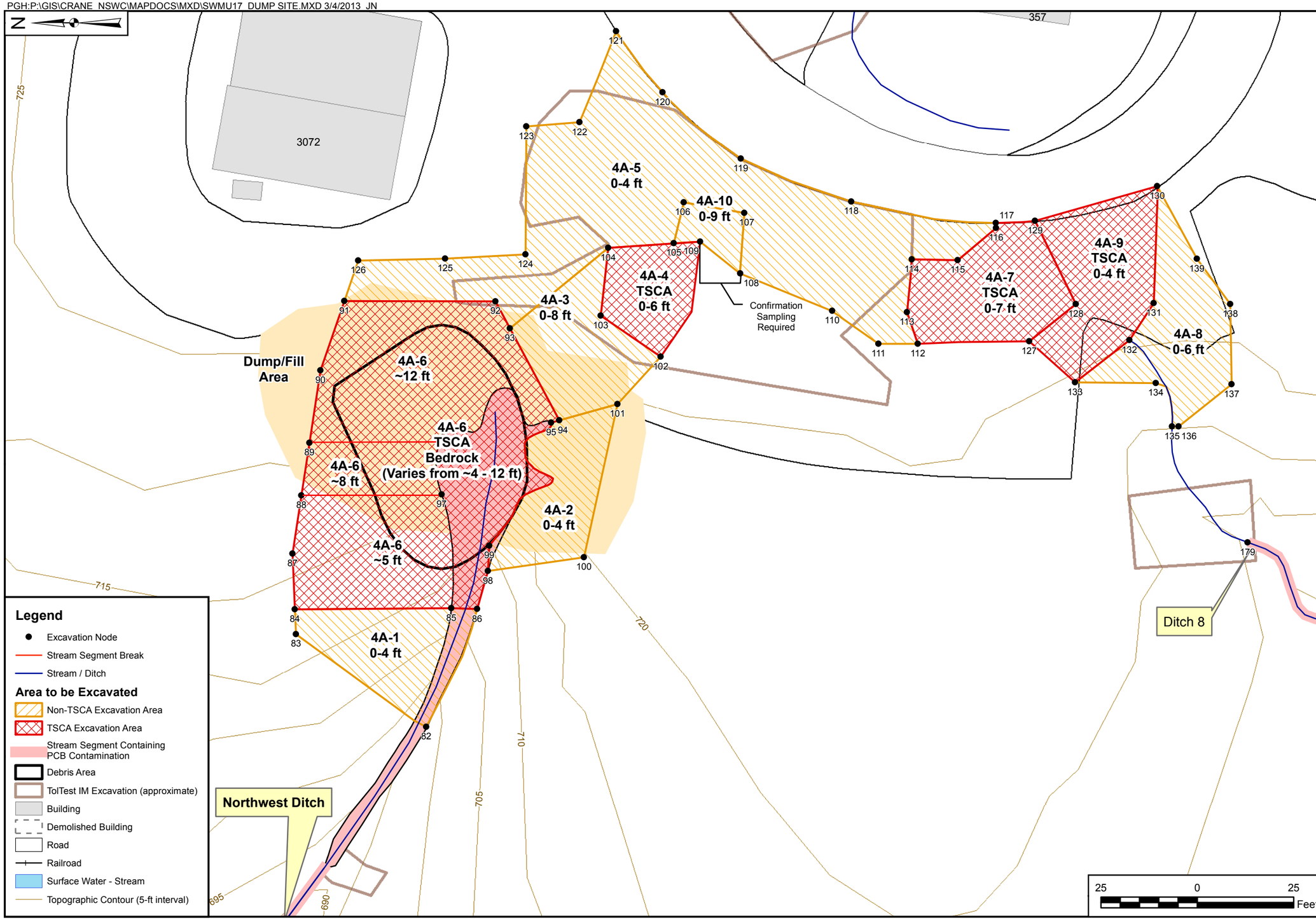
DRAWN BY J. NOVAK DATE 6/25/2012

CHECKED BY T. JOHNSTON DATE 4/8/2013

REVISED BY J. NOVAK DATE 4/8/2013

SCALE AS NOTED

PGH:P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU17_DUMP SITE.MXD 3/4/2013 JN



CONTRACT NUMBER
CTO F271

APPROVED BY	DATE
—	—
APPROVED BY	DATE
—	—

FIGURE NO. 3-6

REV 1

DUMP/FILL AREA EXCAVATION DETAIL
SWMU 17 - PCB CAPACITOR BURIAL/POLE YARD
INTERIM MEASURES WORK PLAN
NSA CRANE
CRANE, INDIANA

NAVFAC

DRAWN BY	DATE
J. NOVAK	6/25/2012
CHECKED BY	DATE
T. JOHNSTON	3/4/2013
REVISED BY	DATE
J. NOVAK	3/4/2013

SCALE
AS NOTED

ATTACHMENT 1

NSA CRANE

FIELD PHONE LIST

April 2013

April 2013

NSA CRANE
FIELD PHONE LIST
Emergency 812 854 1333

Name	Office Number	Mobile Number	Email	Title, Role, or Responsibility
NAVFAC Midwest				
Howard Hickey	(847) 688-2600 ext 243		Howard.hickey@navy.mil	IR Program Manager
NSA Crane				
Tom Brent	812-854-6160	812-296-6482	thomas.brent@navy.mil	Base Contact (Env. Restoration Site Mgr.)
Dispatch	812-854-3300			Communications
Fire Dept - Work Permit	812-854-3343	812-854-1235		Fire Safety
Steve Reddick		812-296-0522	stephen.reddick@navy.mil	Public Works Department/Utilities
Denny Gordon	812-854-8579	812-381-2129		Navy Explosive Safety Officer
Katelin Thard	812-854-6276			Army Explosive Safety Officer
Tetra Tech (Construction Oversight)				
Tom Johnston	412-921-8615	412-417-3396	tom.johnston@tetratech.com	Project Manager
Ralph Basinski	412-921-8308	412-251-9736	ralph.basinski@tetratech.com	Crane Activity Coordinator
Kevin Losekamp	513-333-3680	513-349-5267	kevin.losekamp@tetratech.com	Field Operations Leader
Trailer	812-854-0280	NA	NA	NA
EQM (Construction Contractor)				
Craig Hoby		309-714-1651	choby@eqm.com	Site Supervisor
Bledsoe, Riggert, and Guerrettaz (Surveyor)				
Matt Cooper	812-723-2900		mcooper@brgcivil.com	Surveyor
Test America (Laboratory)				
David Herbert	916.374.4357		David.Herbert@testamericainc.com	Project Manager (located in California)

Ship samples to the following laboratory address for analysis:

4955 Yarrow Street
Arvada, CO 80002
Tel 303.736.0134 | Cell 303.358.4011
debra.henderer@testamericainc.com
www.testamericainc.com

ATTACHMENT 2

LABORATORY CERTIFICATIONS

AND

QUALITY SPECIFICATIONS

Laboratory Specification Sheet #1. Project Action Limits and Laboratory Specific Quantitation and Method Detection Limits (Soil and Sediment, SW-846 Method 8082)

(UFP-QAPP Manual Section 2.8.1)

					Laboratory Specific[2]		
Analyte	**CAS No.**	**Project Action Limit** (mg/Kg	**Project Action Limit Reference[1]**	**Project Quantitation Limit Goal** (mg/Kg	**QLs (mg/Kg)**	**LODs (mg/kg)**	**MDLs (mg/Kg**
PCB – 1016	12674-11-2	**1 (total PCBs)**	**TSCA Regulations**	**0.3 (total PCBs)**	0.033	10	0.0051
PCB – 1221	11104-28-2	**1 (total PCBs)**	**TSCA Regulations**	**0.3 (total PCBs)**	0.047	20	0.0156
PCB – 1232	11141-16-5	**1 (total PCBs)**	**TSCA Regulations**	**0.3 (total PCBs)**	0.033	10	0.0051
PCB – 1242	53469-21-9	**1 (total PCBs)**	**TSCA Regulations**	**0.3 (total PCBs)**	0.033	10	0.0091
PCB – 1248	12672-29-6	**1 (total PCBs)**	**TSCA Regulations**	**0.3 (total PCBs)**	0.033	10	0.0056
PCB – 1254	11097-69-1	**1 (total PCBs)**	**TSCA Regulations**	**0.3 (total PCBs)**	0.033	10	0.0055
PCB – 1260	11096-82-5	**1 (total PCBs)**	**TSCA Regulations**	**0.3 (total PCBs)**	0.033	10	0.0027

1 The limit of 1 mg/kg has been used for previous phases of investigations at SWMU 17 and is required by EPA Region 5 to be used for Interim Measures Phases 1 and 2

2Laboratory-specific MDLs, LODs, and QLs are limits that an individual laboratory can achieve when performing a specific analytical method. These limits may be subject to update.

Laboratory Specification Sheet #2. Project Action Limits and Laboratory Specific Quantitation and Method Detection Limits (Water, SW-846 Method 8082)

(UFP-QAPP Manual Section 2.8.1)

Analyte	CAS No.	Project Action Limit (ug/L)	Project Action Limit Reference[1]	Project Quantitation Limit Goal (ug/L)	Laboratory-specific[1]		
					QLs (LOQ) [2] (ug/L)	LOD (ug/L)	MDLs (ug/L)
PCB – 1016	12674-11-2	0.5	IDEM R-DCL	0.17	1	0.3	0.124
PCB – 1221	**11104-28-2**	**0.5**	**IDEM R-DCL**	**0.17**	**1**	**0.3**	**0.214**
PCB – 1232	11141-16-5	0.5	IDEM R-DCL	0.17	1	0.4	0.166
PCB – 1242	53469-21-9	0.5	IDEM R-DCL	0.17	1	0.3	0.104
PCB – 1248	12672-29-6	0.5	IDEM R-DCL	0.17	1	0.2	0.0915
PCB – 1254	11097-69-1	0.5	IDEM R-DCL	0.17	1	0.3	0.114
PCB – 1260	11096-82-5	0.5	IDEM R-DCL	0.17	1	0.3	0.160
PCB – 1262	37324-23-5	0.5	IDEM R-DCL	0.17	1	0.2	0.0845
PCB – 1268	**11100-14-4**	**0.5**	**IDEM R-DCL**	**0.17**	**1**	**0.6**	**0.363**

[1] Laboratory-specific MDLs, LODs, and QLs are limits that an individual laboratory can achieve when performing a specific analytical method. These limits may be subject to update.

[2] The QL (LOQ) exceeds the Project Action Limit for all items. Items with bold white text and black background indicate that the MDL exceeds the Project Action Limit.

IDEM R-DCL = Indiana Department of Environmental Management Residential Direct Contact limit

Laboratory Specification Sheet #3. **Analytical SOP Requirements Table**
(UFP-QAPP Manual Section 3.1.1)

Matrix	**Analytical Group**	**Analytical / Preparation Method SOP Reference[1]**	**Containers** (number, size, and type)	**Sample volume[3]** (units)	**Preservation Requirements** (chemical, temperature, light protected)	**Maximum Holding Time[2]** (preparation / analysis)
Soil	PCBs	DV-GC-0021 / DV-OP-0015, DV-OP-0016 & DV-OP-0007	1, 4oz, glass jar	60 grams	Cool ≤ 6°C	1 yr to analysis
Water	PCBs	DV-GC-0021 / DV-OP-0007	2, 1-Liter glass	1 Liter	Cool ≤ 6°C	1 yr to analysis

[1] Refer to the Analytical SOP References table (Worksheet #23).
[2] Maximum holding time is calculated from the time the sample is collected to the time the sample is prepared/extracted.
[3] The minimum sample size is based on analysis allowing for sufficient sample for reanalysis. Additional volume is needed for the laboratory Matrix Spike/Matrix Spike Duplicate sample analysis.

Laboratory **Specification Sheet #4.** **Analytical SOP References Table**
(UFP-QAPP Manual Section 3.2.1)

Lab SOP Number	Title, Revision Date, and / or Number[1]	Definitive or Screening Data	Matrix and Analytical Group	Instrument	Organization Performing Analysis	Modified for Project Work?[2] (Y/N)
DV-GC-0021	Revision 6, 06/15/2012 Polychlorinated Biphenyls (PCBs) by GC/ECD (SW846 Method 8082 and 8082A)	Definitive	PCBs, Water & Soil	GC	TestAmerica Denver	N
DV-OP-0007	Revision 7, 12/5/2012 Concentration and Clean-up of Organic Extracts (SW-846 3510C, 3520C, 3540C, 3546, 3550B, 3550C, 3620C, 3660B, 3665A, and EPA 600 series)	Preparation	Organic Prep, Water & Soil	N/A	TestAmerica Denver	N
DV-OP-0015	Revision 3, 01/31/3 Microwave Extraction of Solid Samples by Method [SW 3546]	Preparation	Organic Prep, Soil	N/A	TestAmerica Denver	N
DV-OP-0016	Revision 4, 12/5/2012 Ultrasonic Extraction of Solid Samples by Method SW-846 3550C	Preparation	Organic Prep, Soil	N/A	TestAmerica Denver	N

1 SOPs are reviewed/revised on an annual schedule. The current version will be followed at the time of sample receipt.

Laboratory Specification Sheet #5. Analytical Instrument Calibration Table
(UFP-QAPP Manual Section 3.2.2)

Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria[1]	Corrective Action (CA)	Person Responsible for CA	SOP Reference[2]
GC – 8081/8082/8141/8151	Minimum five-point initial calibration for all target analytes[3]	Initial calibration prior to sample analysis. Perform instrument re-calibration once per year minimum.	RSD of CF ≤ 20% Linear regression correlation coefficient r ≥ 0.995 Non-linear regression: COD (r^2) ≥0.99	Correct problem then repeat initial calibration	Lab Manager / Analyst	DV-GC-0020, DV-GC-0026, DV-GC-0021, DV-GC-0030, DV-GC-0017, & DV-GC-0022
	Initial calibration verification (ICV) must be from a 2nd source	Once immediately following initial calibration	All target analytes within ± 20% of expected value[4]	Correct problem then repeat initial calibration	Lab Manager / Analyst	DV-GC-0020, DV-GC-0026, DV-GC-0021, DV-GC-0030, DV-GC-0017, & DV-GC-0022
	Continuing calibration verification (CCV)	Before sample analysis, after every 10 samples, and at the end of the analysis sequence	All analytes within ± 20% of expected value and within the RT Window[4].	Correct problem then repeat initial CCV (re-calibrate if necessary) and re-analyze all samples since	Lab Manager / Analyst	DV-GC-0020, DV-GC-0026, DV-GC-0021, DV-GC-0030, DV-GC-0017, & DV-GC-0022

Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria[1]	Corrective Action (CA)	Person Responsible for CA	SOP Reference[2]
				last successful CCV.		
	8081 Only - Breakdown check (Endrin and DDT)	Before sample analysis (at beginning of 12 hour sequence)	Degradation ≤15% for both Endrin and DDT.	Inlet/column maintenance; repeat breakdown check and re-analyze all samples since last successful breakdown check.	Lab Manager / Analyst	DV-GC-0020, DV-GC-0026, DV-GC-0021, DV-GC-0030, DV-GC-0017, & DV-GC-0022
	Retention time window calculated for each analyte	System set-up, with each new column or major instrument maintenance. Update the mid-RTW at the start of the run or daily.	RT width is ± 3 times standard deviation for each analyte RT from a 72-hour study.	NA	Lab Manager / Analyst	DV-GC-0020, DV-GC-0026, DV-GC-0021, DV-GC-0030, DV-GC-0017, & DV-GC-0022

1. This is a summary of the acceptance criteria; refer to the method SOP for specific or more information
2. SOPs are reviewed/revised on an annual schedule. The current version will be followed at the time of sample receipt.
3. Method 8082, a five-point calibration is only analyzed for Aroclors 1016 and 1260.
4. TestAmerica-Denver has a variance for the ICV and CCV acceptance criteria for 8141B as ± 30% per source methods; Demeton is evaluated as Demeton Total.

Laboratory Specification Sheet #6. Analytical Instrument and Equipment Maintenance, Testing, and Inspection Table
(UFP-QAPP Manual Section 3.2.3)

Instrument / Equipment	Maintenance Activity	Testing Activity	Inspection Activity	Frequency	Acceptance Criteria	Corrective Action	Responsible Person	SOP Reference[1]
GC	Change septum, clean injection port, change or clip column, install new liner, replace column, filters and seals	Detector signals and chromatogram review	Instrument performance and sensitivity	As needed	CCV passes criteria	Re-inspect injector port, cut additional column, reanalyze CCV, recalibrate instrument	Analyst	Quality Assurance Manual – Section 20

1 SOPs are reviewed/revised on an annual schedule. The current version will be followed at the time of sample receipt.

Laboratory **Specification Sheet #7. Laboratory QC Samples Table**
(UFP-QAPP Manual Section 3.4)

Matrix	Water/ Soil
Analytical Group	PCBs
Analytical Method / SOP Reference[2]	EPA 8081A/8081B/8082/8082A/8141A/8141B/8151A DV-GC-0020, DV-GC-0026, DV-GC-0030, DV-GC-0017, & DV-GC-0022

QC Sample	Frequency/ Number	Method/SOP QC Acceptance Limits[1]	Corrective Action	Person(s) Responsible for Corrective Action	Data Quality Indicator (DQI)	Measurement Performance Criteria
Method Blank	1/Preparatory Batch (20 samples)	No Target Compounds> ½ RL; and > 1/10 the amount in any sample or 1/10 the regulatory limit (whichever is greater). No common lab contaminants >RL.	If sufficient sample is available, reanalyze samples. Qualify data as needed. Report results if sample results >10x blank result or sample results ND.	Analyst / Section Supervisor	Accuracy/Bias-Contamination	No Target Compounds>1/2RL; no common lab contaminants >RL.
Laboratory Control Sample	1/Preparatory Batch (20 samples)	Refer to the Appropriate method Attachments for LCS control limits.	If sufficient sample is available, reanalyze samples. Qualify data as needed.	Analyst / Section Supervisor	Accuracy/Bias	Laboratory % Recovery Control Limits
Matrix Spike/Matrix Spike Duplicate	1/Preparatory Batch (20 samples)	Refer to the Appropriate method Attachments for LCS control limits.	Determine root cause; flag MS/MSD data; discuss in narrative.	Analyst / Section Supervisor	Accuracy/Bias/ Precision	Laboratory % Recovery / RPD Control Limits
Surrogates	Every sample	Refer to the Appropriate method Attachments for Surrogate control limits.	Check calculations and instrument performance; recalculate, reanalyze.	Analyst / Section Supervisor	Accuracy/Bias	Laboratory % Recovery Control Limits
Second-column confirmation	100% for all positive results	Calibration and QC criteria same as for	If the relative % difference of results between the 2 columns is	Analyst / Section Supervisor	Accuracy/Bias	Same as for initial or primary column analysis

QC Sample	Frequency/ Number	Method/SOP QC Acceptance Limits[1]	Corrective Action	Person(s) Responsible for Corrective Action	Data Quality Indicator (DQI)	Measurement Performance Criteria
		initial or primary column analysis. Results between primary and secondary column RPD ≤ 40%	greater than 40% write an NCM and flag the data.			

1- This is a summary of the acceptance criteria; refer to the method SOP for specific or more information.

2- SOPs are reviewed/revised on an annual schedule. The current version will be followed at the time of sample receipt.

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

TESTAMERICA DENVER
4955 Yarrow Street
Arvada, CO 80002
Karen Kuoppala Phone: 303-736-1203
www.testamericainc.com

ENVIRONMENTAL

Valid To: October 31, 2013 Certificate Number: 2907.01

In recognition of the successful completion of the A2LA evaluation process, (including an assessment of the laboratory's compliance with ISO IEC 17025:2005, the 2003 NELAC Chapter 5 Standard, the requirements of the DoD Environmental Laboratory Accreditation Program (DoD ELAP) as detailed in the current DoD Quality Systems Manual for Environmental Laboratories), and for the test methods applicable to the Wyoming Storage Tank Remediation Laboratory Accreditation Program, accreditation is granted to this laboratory to perform recognized EPA methods using the following testing technologies and in the analyte categories identified below:

Testing Technologies

Atomic Absorption/ICP-AES Spectrometry, ICP/MS, Gas Chromatography, Gas Chromatography/Mass Spectrometry, Gravimetry, High Performance Liquid Chromatography, Ion Chromatography, Misc.- Electronic Probes (pH, O_2), Oxygen Demand, Hazardous Waste Characteristics Tests, Spectrophotometry (Visible), Spectrophotometry (Automated), Titrimetry, Total Organic Carbon, Total Organic Halide

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Metals				
Aluminum	----------	----------	EPA 6010B / 6010C	EPA 6010B / 6010C
Antimony	----------	----------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Arsenic	----------	----------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Barium	----------	----------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Beryllium	----------	----------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Boron	----------	----------	EPA 6010B / 6010C	EPA 6010B / 6010C

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Cadmium	EPA 6010C	----------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Calcium	----------	----------	EPA 6010B / 6010C	EPA 6010B / 6010C
Chromium	EPA 6010C	----------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Cobalt	----------	----------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Copper	----------	----------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Iron	----------	----------	EPA 6010B / 6010C	EPA 6010B / 6010C
Lead	EPA 6010C	----------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Lithium	----------	----------	EPA 6010B / 6010C	EPA 6010B / 6010C
Magnesium	----------	----------	EPA 6010B / 6010C	EPA 6010B / 6010C
Manganese	----------	----------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Mercury	----------	----------	EPA 7470A	EPA 7471A / 7471B
Molybdenum	----------	----------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Nickel	----------	----------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Potassium	----------	----------	EPA 6010B / 6010C	EPA 6010B / 6010C
Selenium	----------	----------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Silica	----------	----------	EPA 6010B / 6010C	EPA 6010B / 6010C
Silicon	----------	----------	EPA 6010B / 6010C	EPA 6010B / 6010C
Silver	----------	----------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Sodium	----------	----------	EPA 6010B / 6010C	EPA 6010B / 6010C
Strontium	----------	----------	EPA 6010B / 6010C	EPA 6010B / 6010C
Thallium	----------	----------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Tin	----------	----------	EPA 6010B / 6010C	EPA 6010B / 6010C
Titanium	----------	----------	EPA 6010B / 6010C	EPA 6010B / 6010C
Vanadium	----------	----------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Zinc	----------	----------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Nutrients				
Nitrate (as N)	----------	By calculation	By calculation / EPA 9056 / 9056A	By calculation / EPA 9056 / 9056A
Nitrate-nitrite (as N)	----------	EPA 353.2	EPA 353.2 / 9056 / 9056A	EPA 9056 / 9056A
Nitrite (as N)	----------	SM 4500-NO2 B	SM 4500-NO2 B; EPA 9056 / 9056A	EPA 9056 / 9056A
Orthophosphate (as P)	----------	----------	EPA 9056 / 9056A	EPA 9056 / 9056A
Total phosphorus	----------	----------	EPA 6010B / 6010C	EPA 6010B / 6010C
Demands		----------		
Total organic carbon	----------	----------	EPA 9060 / 9060A	EPA 9060 / 9060A
Total organic halides	----------	----------	EPA 9020B	----------
Wet Chemistry				----------
Alkalinity	----------	SM 2320 B	SM 2320 B	SM 2320 B
Ammonia	----------	EPA 350.1	EPA 350.1	----------
Biological Oxygen Demand	----------	SM 5210B	SM 5210B	----------
Bromide	----------	----------	EPA 9056 / 9056A	EPA 9056 / 9056A
Total organic carbon	----------	----------	EPA 9060/9060A	EPA 9060 / 9060A
Chloride	----------	----------	EPA 9056 / 9056A	EPA 9056 / 9056A
Chemical Oxygen Demand	----------	EPA 410.4	EPA 410.4	
Conductivity	----------	----------	EPA 9050 / 9050A	EPA 9050 / 9050A
Cyanide	----------	----------	EPA 9010B / 9012A / 9012B	EPA 9010B / 9012A / 9012B
Ferrous Iron	----------	SM 3500 Fe B, D	SM 3500 Fe B, D	
Fluoride	----------	----------	EPA 9056 / 9056A	EPA 9056 / 9056A
Hexavalent Chromium	EPA 7196A	----------	EPA 7196A	EPA 7196A / 3060A
pH	----------	----------	EPA 9040B / 9045C	EPA 9040B / 9045C
Oil and Grease (HEM and SGT-HEM)	----------	----------	EPA 1664A	9071B
Percent moisture	----------	----------	----------	ASTM D2216
Perchlorate	----------	----------	----------	EPA 6860
Phenols	----------	----------	EPA 9066	EPA 9066
Solids, Total	----------	SM 2540 B	SM 2540 B	SM 2540 B
Solids, Total Suspended	----------	SM 2540 D	SM 2540 D	SM 2540 D
Solids, Total Dissolved	----------	SM 2540 C	SM 2540 C	SM 2540 C

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Sulfate	----------	----------	EPA 9038 / 9056 / 9056A	EPA 9038 / 9056 / 9056A
Sulfide, Total	----------	----------	EPA 9034	EPA 9034
Sulfide	----------	----------	EPA 9030B	EPA 9030B
Total Kjeldahl Nitrogen	----------	----------	EPA 351.2	----------
Purgeable Organics (volatiles)				----------
Acetone	----------	----------	EPA 8260B	EPA 8260B
Acetonitrile	----------	----------	EPA 8260B	EPA 8260B
Acrolein	----------	----------	EPA 8260B	EPA 8260B
Acrylonitrile	----------	----------	EPA 8260B	EPA 8260B
Allyl Chloride	----------	----------	EPA 8260B	EPA 8260B
tert-Amyl Methyl Ether	EPA 8260B			
Benzene	EPA 8260B / 8021B	----------	EPA 8260B / 8021B / AK101	EPA 8260B / 8021B / AK101
Bromobenzene	----------	----------	EPA 8260B	EPA 8260B
Bromochloromethane	----------	----------	EPA 8260B	EPA 8260B
Bromodichloromethane	----------	----------	EPA 8260B	EPA 8260B
Bromoform	----------	----------	EPA 8260B	EPA 8260B
Bromomethane	----------	----------	EPA 8260B	EPA 8260B
2-Butanone	----------	----------	EPA 8260B	EPA 8260B
n-Butyl alcohol	----------	----------	EPA 8260B / 8015B / 8015C	EPA 8260B / 8015B / 8015C
tert-Butyl alcohol	EPA 8260B			
n-Butylbenzene	----------	----------	EPA 8260B	EPA 8260B
Sec-Butylbenzene	----------	----------	EPA 8260B	EPA 8260B
Tert-Butylbenzene	----------	----------	EPA 8260B	EPA 8260B
Carbon disulfide	----------	----------	EPA 8260B	EPA 8260B
Carbon tetrachloride	----------	----------	EPA 8260B	EPA 8260B
Chlorobenzene	----------	----------	EPA 8260B / 8021B	EPA 8260B / 8021B
2-Chloro-1,3-butadiene	----------	----------	EPA 8260B	EPA 8260B
Chloroethane	----------	----------	EPA 8260B	EPA 8260B
2-Chloroethyl vinyl ether	----------	----------	EPA 8260B	EPA 8260B
Chloroform	----------	----------	EPA 8260B	EPA 8260B
1-Chlorohexane	----------	----------	EPA 8260B	EPA 8260B
Chloromethane	----------	----------	EPA 8260B	EPA 8260B
Chloroprene	----------	----------	EPA 8260B	EPA 8260B
3-Chloroprene	----------	----------	EPA 8260B	EPA 8260B
4-Chlorotoluene	----------	----------	EPA 8260B	EPA 8260B
2-Chlorotoluene	----------	----------	EPA 8260B	EPA 8260B
Cyclohexane	----------	----------	EPA 8260B	EPA 8260B
Cyclohexanone	----------	----------	EPA 8260B	EPA 8260B
Dibromochloromethane	----------	----------	EPA 8260B	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)	----------	EPA 504	EPA 504 / 8260B / 8011	EPA 8260B / 8011
Dibromochloromethane	----------	----------	EPA 8260B	EPA 8260B
Dichlorodifluoromethane	----------	----------	EPA 8260B	EPA 8260B
Dibromomethane	----------	----------	EPA 8260B	EPA 8260B
1,2 Dibromoethane (EDB)	EPA 8011	EPA 504	EPA 504 / 8260B / 8011	EPA 8260B / 8011

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
1,2-Dichlorobenzene	----------	----------	EPA 8260B / 8021B	EPA 8260B / 8021B
1,3-Dichlorobenzene	----------	----------	EPA 8260B / 8021B	EPA 8260B / 8021B
1,4-Dichlorobenzene	----------	----------	EPA 8260B / 8021B	EPA 8260B / 8021B
cis-1,4-Dichloro-2-butene	----------	----------	EPA 8260B	EPA 8260B
trans-1,4-Dichloro-2-butene	----------	----------	EPA 8260B	EPA 8260B
1,1-Dichloroethane	----------	----------	EPA 8260B	EPA 8260B
1,2-Dichloroethane	EPA 8260B	----------	EPA 8260B	EPA 8260B
1,1-Dichloroethene	----------	----------	EPA 8260B	EPA 8260B
1,2-Dichloroethene	----------	----------	EPA 8260B	EPA 8260B
cis-1,2-Dichloroethene	----------	----------	EPA 8260B	EPA 8260B
trans-1,2-Dichloroethene	----------	----------	EPA 8260B	EPA 8260B
Dichlorofluoromethane	----------	----------	EPA 8260B	EPA 8260B
1,2-Dichloropropane	----------	----------	EPA 8260B	EPA 8260B
1,3-Dichloropropane	----------	----------	EPA 8260B	EPA 8260B
2,2-Dichloropropane	----------	----------	EPA 8260B	EPA 8260B
1,1-Dichloropropene	----------	----------	EPA 8260B	EPA 8260B
1,3-Dichloropropene	----------	----------	EPA 8260B	EPA 8260B
cis-1,3-Dichloropropene	----------	----------	EPA 8260B	EPA 8260B
trans-1,3-Dichloropropene	----------	----------	EPA 8260B	EPA 8260B
Diethyl ether	----------	----------	EPA 8260B	EPA 8260B
Di-isopropylether	EPA 8260B	----------	EPA 8260B	EPA 8260B
1,4-Dioxane	----------	----------	EPA 8260B / 8260B SIM	EPA 8260B / 8260B SIM
Ethanol	----------	----------	EPA 8260B / 8015B / 8015C	EPA 8260B / 8015B / 8015C
Ethyl acetate	----------	----------	EPA 8260B	EPA 8260B
Ethyl benzene	EPA 8260B/8021B	----------	EPA 8260B / 8021B / AK101	EPA 8260B / 8021B/ AK101
Ethyl methacrylate	----------	----------	EPA 8260B	EPA 8260B
Ethyl tert-Butyl Ether	EPA 8260B			
Ethylene Glycol	----------	----------	EPA 8015C	EPA 8015C
Gas Range Organics (GRO)	EPA 8015C	----------	EPA 8015B / 8015C / AK101 / 8015D	EPA 8015B / 8015C / AK101 / 8015D
Hexane	----------	----------	EPA 8260B	EPA 8260B
2-Hexanone	----------	----------	EPA 8260B	EPA 8260B
Hexachlorobutadiene	----------	----------	EPA 8260B	EPA 8260B
Isobutyl alcohol (2-Methyl-1-propanol)	----------	----------	EPA 8260B / 8015B / 8015C	EPA 8260B / 8015B / 8015C
Isopropyl alcohol	----------	----------	EPA 8260B	EPA 8260B
Isopropylbenzene	----------	----------	EPA 8260B	EPA 8260B
1,4-Isopropyltoluene	----------	----------	EPA 8260B	EPA 8260B
Iodomethane	----------	----------	EPA 8260B	EPA 8260B
Methacrylonitrile	----------	----------	EPA 8260B	EPA 8260B
Methanol	----------	----------	EPA 8015B / 8015C	EPA 8015B / 8015C
Methyl acetate	----------	----------	EPA 8260B	EPA 8260B
Methyl cyclohexane	----------	----------	EPA 8260B	EPA 8260B
Methylene chloride	----------	----------	EPA 8260B	EPA 8260B

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Methyl ethyle ketone (MEK)	----------	----------	EPA 8260B	EPA 8260B
Methyl isobutyl ketone	----------	----------	EPA 8260B	EPA 8260B
Methyl methacrylate	----------	----------	EPA 8260B	EPA 8260B
Methyl tert-butyl ether (MtBE)	EPA 8260B / 8021B	----------	EPA 8260B / 8021B	EPA 8260B / 8021B
4-Methyl-2-pentanone	----------	----------	EPA 8260B	EPA 8260B
Naphthalene	EPA 8260B / 8021B	----------	EPA 8260B	EPA 8260B
2-Nitropropane	----------	----------	EPA 8260B	EPA 8260B
2,2' Oxybisethanol	----------	----------	EPA 8015C	EPA 8015C
2-Pentanone	----------	----------	EPA 8260B	EPA 8260B
2-Propanol	----------	----------	EPA 8260B	EPA 8260B
Propionitrile	----------	----------	EPA 8260B	EPA 8260B
n-Propylbenzene	----------	----------	EPA 8260B	EPA 8260B
Propylene Glycol	----------	----------	EPA 8015C	EPA 8015C
Styrene	----------	----------	EPA 8260B	EPA 8260B
1,1,1,2-Tetrachloroethane	----------	----------	EPA 8260B	EPA 8260B
1,1,2,2-Tetrachloroethane	----------	----------	EPA 8260B	EPA 8260B
Tetrachloroethene	----------	----------	EPA 8260B	EPA 8260B
Tetrahydrofuran	----------	----------	EPA 8260B	EPA 8260B
Toluene	EPA 8260B / 8021B	----------	EPA 8260B / 8021B / AK101	EPA 8260B / 8021B / AK101
Total Petroleum Hydrocarbons (TPH)	----------	EPA 1664A	EPA 1664A	----------
1,2,3-Trichlorobenzene	----------	----------	EPA 8260B	EPA 8260B
1,1,1-Trichloroethane	----------	----------	EPA 8260B	EPA 8260B
1,1,2-Trichloroethane	----------	----------	EPA 8260B	EPA 8260B
Trichloroethene	----------	----------	EPA 8260B	EPA 8260B
Trichlorofluoromethane	----------	----------	EPA 8260B	EPA 8260B
1,2,3-Trichlorobenzene	----------	----------	EPA 8260B	EPA 8260B
1,2,4-Trichlorobenzene	----------	----------	EPA 8260B	EPA 8260B
1,2,3-Trichloropropane	----------	EPA 504.1	EPA 504.1 / 8260B / 8011	EPA 8260B / 8011
1,1,2-Trichloro-1,2,2-trifluoroethane	----------	----------	EPA 8260B	EPA 8260B
Triethylene Glycol	----------	----------	EPA 8015C	EPA 8015C
1,2,3-Trimethylbenzene	----------	----------	EPA 8260B	EPA 8260B
1,2,4-Trimethylbenzene	----------	----------	EPA 8260B	EPA 8260B
1,3,5-Trimethylbenzene	----------	----------	EPA 8260B	EPA 8260B
Vinyl acetate	----------	----------	EPA 8260B	EPA 8260B
Vinyl chloride	----------	----------	EPA 8260B	EPA 8260B
Xylenes, total	EPA 8260B / 8021B	----------	EPA 8260B / 8021B / AK101	EPA 8260B / 8021B / AK101
1,2-Xylene	EPA 8260B / 8021B	----------	EPA 8260B / 8021B / AK101	EPA 8260B / 8021B / AK101
M+P-Xylene	EPA 8260B / 8021B	----------	EPA 8260B / 8021B / AK101	EPA 8260B / 8021B / AK101
Methane	----------	----------	RSK-175	----------
Ethane	----------	----------	RSK-175	----------
Ethylene (Ethene)	----------	----------	RSK-175	----------
Acetylene	----------	----------	RSK-175	----------

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Acetylene Ethane	----------	----------	RSK-175	----------
Extractable Organics (semivolatiles)				
Acenaphthene	----------	----------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Acenaphthylene	----------	----------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Acetophenone	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
2-Acetylaminofluorene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Alachlor	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
4-Aminobiphenyl	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Aniline	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Anthracene	----------	----------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Aramite	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Atrazine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Azobenzene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Benzaldehyde	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Benzidine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Benzoic acid	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Benzo (a) anthracene	----------	----------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Benzo (b) fluoranthene	----------	----------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Benzo (k) fluoranthene	----------	----------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Benzo (ghi) perylene	----------	----------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Benzo (a) pyrene	----------	----------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Benzyl alcohol	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Bis (2-chloroethoxy) methane	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Bis (2-chloroethyl) ether	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Bis (2-chloroisopropyl) ether (2,2'Oxybis(1-chloropropane)	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Bis (2-ethylhexyl) phthalate	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
4-Bromophenyl phenyl ether	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Butyl benzyl phthalate	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
2-sec-Butyl-4,6-dinitrophenol	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Carbazole	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
4-Chloroanilene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Chlorobenzilate	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
4-Chloro-3-methylphenol	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
1-Chloronaphthalene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
2-Chloronaphthalene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
2-Chlorophenol	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
4-Chlorophenyl phenyl ether	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Chrysene	----------	----------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Cresols	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Diallate	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Dibenzo (a,h) anthracene	----------	----------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Dibenzofuran	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,2-Dichlorobenzene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,3-Dichlorobenzene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,4-Dichlorobenzene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
3,3'-Dichlorobenzidine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
2,4-Dichlorophenol	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
2,6-Dichlorophenol	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Diethyl phthalate	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Dimethoate	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
3,3-Dimethylbenzidine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
p-Dimethylaminoazobenzene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
7,12-Dimethylbenz(a)anthracene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Alpha-,alpha-Dimethylphenethylamine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
2,4-Dimethylphenol	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Dimethyl phthalate	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Di-n-butyl phthalate	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Di-n-octyl phthalate	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,3-Dinitrobenzene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,4-Dinitrobenzene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
2,4-Dinitrophenol	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
2,4-Dinitrotoluene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
2,6-Dinitrotoluene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,4-Dioxane	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Diphenylamine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,2-Diphenylhydrazine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Disulfoton	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Diesel Range Organics (DRO)	EPA 8015C	----------	EPA 8015B / 8015C, AK102, TX 1005 / 8015D	EPA 8015B / 8015C, AK102, TX 1005 / 8015D
Ethyl methanesulfonate	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Famphur	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Fluoroanthene	----------	----------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Fluorene	----------	----------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Gasoline Range Organics	----------	----------	TX 1005	TX 1005
Hexachlorobenzene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Hexachlorobutadiene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Hexachlorocyclopentadiene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Hexachloroethane	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Hexachloropropene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Indeno (1,2,3-cd) pyrene	----------	----------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Isodrin	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Isophorone	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Isosafrole	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Methapyrilene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
3-Methylcholanthrene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
2-Methyl-4,6-Dinitrophenol	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Methyl methane sulfonate	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
2-Methylcholanthrene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
1-Methylnaphthalene	----------	----------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
2-Methylnaphthalene	----------	----------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
2-Methylphenol	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
3+4-Methylphenol	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Naphthalene	----------	----------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
1,4-Naphthoquinone	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
1-Naphthylamine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
2-Naphthylamine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
2-Nitroaniline	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
3-Nitroaniline	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
4-Nitroaniline	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Nitrobenzene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
2-Nitrophenol	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
4-Nitrophenol	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Nitroquinoline-1-oxide	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
N-Nitrosodiethylamine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
N-Nitrosodimethylamine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
N-Nitrosodi-n-butylamine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
N-Nitrosodi-n-propylamine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
N-Nitrosodiphenylamine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
N-Nitrosomethylethylamine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
N-Nitrosomorpholine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
N-Nitrosopiperidine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
N-Nitrosopyrrolidine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
5-Nitro-o-toluidine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
2,2-oxybis(1-chloropropane)	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Parathion, methyl	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Parathion, ethyl	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Pentachlorobenzene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Pentachloroethane	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Pentachloronitobenzene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Pentachlorophenol	----------	----------	EPA 8270C / 8270D / 8321A / 8321B	EPA 8270C / 8270D / 8321A / 8321B
Phenacetin	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Phenanthrene	----------	----------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Phenol	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,4-Phenylenediamine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Phorate	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
2-Picoline	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Pronamide	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Pyrene	----------	----------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Pyridine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Safrole	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Sulfotepp	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,2,4,5-Tetrachlorobenzene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
2,3,4,6-Tetrachlorophenol	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Thionazin	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
o-Toluidine	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,2,4-Trichlorobenzene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
2,4,5-Trichlorophenol	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
2,4,6-Trichlorophenol	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
o,o,o-Triethyl phosphorothioate	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,3,5-Trinitrobenzene	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Tris(2,3-Dibromopropyl) phosphate	----------	----------	EPA 8270C / 8270D	EPA 8270C / 8270D
Motor Oil (Residual Range Organics)	----------	----------	EPA 8015B / 8015C, AK103	EPA 8015B / 8015C, AK103
Pesticides/Herbicides/PCBs				
Aldrin	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
Atrazine	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Azinophos ethyl	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Azinophos methyl	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
alpha-BHC	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
Beta-BHC	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
delta-BHC	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
Gamma-BHC	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
Bolstar	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Alpha-Chlordane	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
Gamma-Chlordane	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
Chlordane (technical)	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Chloropyrifos	----------	----------	EPA 8081A / 8081B / 8141A / 8141B	EPA 8081A / 8081B / 8141A / 8141B
Coumaphos	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
2,4-D	----------	----------	EPA 8151A / 8321A	EPA 8151A /8321A
Dalapon	----------	----------	EPA 8151A / 8321A	EPA 8151A / 8321A
2,4-DB	----------	----------	EPA 8151A / 8321A	EPA 8151A / 8321A
4,4'-DDD	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
4,4'-DDE	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
4,4',-DDT	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
Demeton-O	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Demeton-S	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Demeton, total	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Diazinon	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Dicamba	----------	----------	EPA 8151A / 8321A	EPA 8151A / 8321A
Dichlorovos	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Dichloroprop	----------	----------	EPA 8151A / 8321A	EPA 8151A / 8321A
Dicofol	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
Dieldrin	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
Dimethoate	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Dinoseb	----------	----------	EPA 8151A / 8321A	EPA 8151A / 8321A
Disulfoton	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Endosulfan I	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
Endosulfan II	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
Endonsulfan sulfate	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
Endrin	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
Endrin aldehyde	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Endrin ketone	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
EPN	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Ethoprop	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Ethyl parathion	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Famphur	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Fensulfothion	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Fenthion	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Heptachlor	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
Heptachlor epoxide	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
Hexachlorobenzene	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
Malathion	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
MCPA	----------	----------	EPA 8151A / 8321A	EPA 8151A / 8321A
MCPP	----------	----------	EPA 8151A / 8321A	EPA 8151A / 8321A
Merphos	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Methoxychlor	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
Methyl parathion	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Mevinphos	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Naled	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
PCB-1016 (Arochlor)	----------	----------	EPA 8082 / 8082A	EPA 8082 / 8082A
PCB-1221	----------	----------	EPA 8082 / 8082A	EPA 8082 / 8082A
PCB-1232	----------	----------	EPA 8082 / 8082A	EPA 8082 / 8082A
PCB-1242	----------	----------	EPA 8082 / 8082A	EPA 8082 / 8082A
PCB-1248	----------	----------	EPA 8082 / 8082A	EPA 8082 / 8082A
PCB-1254	----------	----------	EPA 8082 / 8082A	EPA 8082 / 8082A
PCB-1260	----------	----------	EPA 8082 / 8082A	EPA 8082 / 8082A
PCB-1262	----------	----------	EPA 8082 / 8082A	EPA 8082 / 8082A
PCB-1268	----------	----------	EPA 8082 / 8082A	EPA 8082 / 8082A
Phorate	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Phosmet	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Propazine	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Ronnel	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Simazine	----------	----------	EPA 8081A / 8081B / 8141A / 8141B	EPA 8081A / 8081B / 8141A / 8141B
Stirophos	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Sulfotepp	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
2,4,5-T	----------	----------	EPA 8151A / 8321A	EPA 8151A / 8321A
Thionazin	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Tokuthion	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
2,4,5-TP	----------	----------	EPA 8151A / 8321A	EPA 8151A / 8321A
Toxaphene	----------	----------	EPA 8081A / 8081B	EPA 8081A / 8081B
Trichloronate	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
o,o,o-triethylphos phorothioate	----------	----------	EPA 8141A / 8141B	EPA 8141A / 8141B
Explosives				
1,3,5-Trinitrobenzene	----------	----------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
1,3-Dinitrobenzene	----------	----------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
2,4,6-Trinitrotoluene	----------	----------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
3,5-Dinitroaniline	----------	----------	EPA 8330B	EPA 8330B
2,4-Dinitrotoluene	----------	----------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
2,6-Dinitroltoluene	----------	----------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
2-Amino-4,6-dinitrotoluene	----------	----------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
2-Nitrotoluene	----------	----------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
3-Nitrotoluene	----------	----------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
4-Amino-2,6-dinitrotoluene	----------	----------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
4-Nitrotoluene	----------	----------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
Nitrobenzene	----------	----------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
Nitroglycerin	----------	----------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
Octahydro-1,3,5,7-tetrabitro-1,3,5,7-tetrazocine (HMX)	----------	----------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
Pentaerythritoltetranitrate (PETN)	----------	----------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
Picric acid	----------	----------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)	----------	----------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
Tetryl (methyl2,4,6-trinitrophenylnitramine	----------	----------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
Hydrazines				
Hydrazine	----------	SOP DV WC-0077	SOP DV WC-0077	SOP DV WC-0077
Monomethyl hydrazine	----------	SOP DV WC-0077	SOP DV WC-0077	SOP DV WC-0077
1,1-Dimethylhydrazine	----------	SOP DV WC-0077	SOP DV WC-0077	SOP DV WC-0077
Perfluorinated Hydrocarbons (PFCs) and Perfluorinated Sulfonates (PFSs)				
Perfluorobutanoic acid	----------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluoropentanoic acid	----------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorohexanoic acid	----------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluoroheptanoic acid	----------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorooctanoic acid	----------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorononanoic acid	----------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorodecanoic acid	----------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluoroundecanoic acid	----------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorododecanoic acid	----------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorotridecanoic acid	----------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorotetradecanoic acid	----------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorobutane Sulfonate	----------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorohexane Sulfonate	----------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorooctane Sulfonate	----------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorodecane Sulfonate	----------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorooctane Sulfonamide	----------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
N-Nitrosodimethylamine (NDMA)	----------	SOP DV-LC-0019	SOP DV-LC-0019	SOP DV-LC-0019
Hazardous Waste Characteristics				
Conductivity	----------	----------	EPA 9050A	EPA 9050A
Corrosivity	----------	----------	EPA 9040B	9045C
Ignitibility	----------	EPA 1010/EPA 1010A	EPA 1010 / 1010A	EPA 1010 / 1010A
Paint Filter Liquids Test	----------	----------	EPA 9095A	EPA 9095A
Synthetic Precipitation Leaching Procedure (SPLP)	----------	----------	EPA 1312	EPA 1312
ToxicityCharacteristic Leaching Procedure	----------	----------	EPA 1311	EPA 1311
Organic Prep Methods				
Separatory Funnel Liquid-Liquid Extraction	----------	----------	EPA 3510C	----------
Continuous Liquid-Liquid Extraction	----------	----------	EPA 3520C	----------
Soxhlet Extraction	----------	----------	----------	EPA 3540C
Microwave Extraction	----------	----------	----------	EPA 3546
Ultrasonic Extraction	----------	----------	----------	EPA 3550B
Ultrasonic Extraction	----------	----------	----------	EPA 3550C
Waste Dilution	----------	----------	EPA 3580A	EPA 3580A
Solid Phase Extraction Volatiles Purge and trap Volatiles purge and trap for soils	----------	----------	EPA 3535A EPA 5030B	EPA 5030B EPA 5035
Organic Cleanup Procedures				
Florisil Cleanup	----------	----------	EPA 3620B	EPA 3620B
Florisil Cleanup	----------	----------	EPA 3620C	EPA 3620C
Sulfur Cleanup	----------	----------	EPA 3660B	EPA 3660B
Sulfuric Acid/Permanganate Cleanup	----------	----------	EPA 3665A	EPA 3665A
Metals Digestion				
Acid Digestion Total Recoverable or Dissolved Metals	----------	----------	EPA 3005A	----------
Acid Digestion for Total Metals	----------	----------	EPA 3010A	----------
Acid Digestion for Total Metals	----------	----------	EPA 3020A	----------
Acid Digestion of Sediments, Sludges and Soils	----------	----------	----------	EPA 3050B

The American Association for Laboratory Accreditation

World Class Accreditation

Accredited DoD ELAP Laboratory

A2LA has accredited

TESTAMERICA DENVER

Arvada, CO

for technical competence in the field of

Environmental Testing

In recognition of the successful completion of the A2LA evaluation process that includes an assessment of the laboratory's compliance with ISO/IEC 17025:2005, the 2003 NELAC Chapter 5 Standard, and the requirements of the Department of Defense Environmental Laboratory Accreditation Program (DoD ELAP) as detailed in the current DoD Quality Systems Manual for Environmental Laboratories (QSM); accreditation is granted to this laboratory to perform recognized EPA methods as defined on the associated A2LA Environmental Scope of Accreditation. This accreditation demonstrates technical competence for this defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

AMERICAN ASSOCIATION FOR LABORATORY ACCREDITATION
CORPORATE SEAL 1978
DISTRICT OF COLUMBIA
A2LA

Presented this 5th day of October 2011.

President & CEO
For the Accreditation Council
Certificate Number 2907.01
Valid to October 31, 2013

For the tests or types of tests to which this accreditation applies, please refer to the laboratory's Environmental Scope of Accreditation.

ATTACHMENT 3

ENVIRONMENTAL PROTECTION AGENCY REGION 5 ELECTRONIC MAIL APPROVAL OF SAMPLING STRATEGY NEAR SAMPLING LOCATIONS 17SB003T TO 17SB005T IN THE NORTHWEST DITCH

Note: Specific sampling locations will be selected based on field verification of local topography.

From:	Ramanauskas, Peter
To:	Brent, Thomas CIV NAVFAC MW, PWD Crane EV
Cc:	Hickey, Howard M CIV NAVFAC MW EV; Johnston, Tom; Basinski, Ralph
Subject:	RE: SWMU 17 DELINEATION & CONFIRMATION SAP FTMR
Date:	Tuesday, April 09, 2013 1:38:52 PM

I'm good with it.

-----Original Message-----
From: Brent, Thomas CIV NAVFAC MW, PWD Crane EV [mailto:thomas.brent@navy.mil]
Sent: Tuesday, April 09, 2013 10:17 AM
To: Ramanauskas, Peter
Cc: Hickey, Howard M CIV NAVFAC MW EV; Johnston, Tom; Basinski, Ralph
Subject: RE: SWMU 17 DELINEATION & CONFIRMATION SAP FTMR

Yes, "TBD" means we intend to do step outs to <1 ppm. If your good with it, I don't think we need a call.

-Tom

-----Original Message-----
From: Ramanauskas, Peter [mailto:ramanauskas.peter@epa.gov]
Sent: Tuesday, April 09, 2013 9:39
To: Brent, Thomas CIV NAVFAC MW, PWD Crane EV
Cc: Hickey, Howard M CIV NAVFAC MW EV; Johnston, Tom
Subject: RE: SWMU 17 DELINEATION & CONFIRMATION SAP FTMR

Thanks, Tom. Those changes appear acceptable as I assume per the notation "TBD", you will continue to step out until you've got it bounded to < 1 ppm.

Let me know if you want to get on a call.

Thanks,
Pete

-----Original Message-----
From: Brent, Thomas CIV NAVFAC MW, PWD Crane EV [mailto:thomas.brent@navy.mil]
Sent: Monday, April 08, 2013 7:25 AM
To: Ramanauskas, Peter
Cc: Hickey, Howard M CIV NAVFAC MW EV; Johnston, Tom
Subject: RE: SWMU 17 DELINEATION & CONFIRMATION SAP FTMR

Pete,

Please see the attached email which addresses your comments concerning the area in the NW Ditch with sample locations >1 ppm PCB. After your review, it may be that we'll need a quick call to clarify any further questions you might have.

Thanks,
Tom

-----Original Message-----
From: Ramanauskas, Peter [mailto:ramanauskas.peter@epa.gov]
Sent: Friday, April 05, 2013 15:16
To: Brent, Thomas CIV NAVFAC MW, PWD Crane EV
Subject: RE: SWMU 17 DELINEATION & CONFIRMATION SAP FTMR

Hi Tom,

Thanks for the opportunity to review. No comments on the FTMR/SAP as written, but one thing I did notice in reviewing this and the figures in the IMWP brings up a question:

Referring to Figure 2-6 of the IMWP, what about excavation of the 17SB005T, 17SB310, 17SB004T, 17SB252, 17SB309, 17SB311, 17SB253, 17SB003T sample locations? I must have missed these before, but as it looks like some of them extend outside of the NW ditch channel, maybe this area should be added to the FTMR/SAP for additional characterization/confirmation sampling?

Also, the letter is down with our Division Director. I will see if she has questions for me with respect to public notice on this IM. If she does, I'll let her know that you guys have web-sites up where documents can be viewed. In checking Crane's websites, it would be good to make sure things like the latest workplan are uploaded to the Administrative Record location:

https://portal.navfac.navy.mil/portal/page/portal/navfac/navfac_ww_pp/navfac_hq_pp/navfac_env_pp/env_restoration_installations/lant/midwest/crane_nsa/records

I also noticed that the Environmental Restoration site doesn't have the latest documents (e.g. SWMU 17):

http://www.navsea.navy.mil/nswc/crane/community/Pages/Environmental_Restoration.aspx?View={E4259AD9-F666-4EBA-A48E-F74E79643B46}&SelectedID=17

As a thought, it may be good to have a section on the Environmental Restoration site with updates on upcoming investigation/remedial activities and links to information such as can be found in the Administrative Record for a particular SWMU.

Let me know if you'd like to discuss any of this.

Thanks,
Pete

-----Original Message-----
From: Brent, Thomas CIV NAVFAC MW, PWD Crane EV [mailto:thomas.brent@navy.mil]
Sent: Friday, April 05, 2013 9:57 AM
To: Ramanauskas, Peter
Subject: SWMU 17 DELINEATION & CONFIRMATION SAP FTMR
Importance: High

Pete,

Attached is the FTMR/SAP for the delineation and confirmation sampling at SWMU 17. It's fairly short - if you could take a quick look and let us know if you have any comments or questions, it would be greatly appreciated. Tetra Tech is coming out next week to take the delineation samples.

BTW - it looks like the contractor is still planning to mob equipment on the 15 with plans to begin excavations on the 18th.

Thanks,
Tom