DATA PACKAGE TRAVELER SHEET

SDG # FP0146	RHA BOX #	SAF # F02-001

SDR #(s)	SAF TITLE 200-ZP-1 Pump & Treat Bi-Weekly and Quarterly Process Monitoring

START/END DATE	DP PROCESS ACTION	COMMENTS
11/5/2003 / 1/28/2004	DELIVERY GROUP	
11/5/2003 / 1/9/2004	PRELIMINARY DATA	Chem - 01/09/04 (Not received from samplers until 01/12/04);
1/9/2004 / 1/28/2004	FINAL DATA - CHEMICAL	Chem - 01/28/04;
1/9/2004 / 1/28/2004	ON HOLD	Still need final review (Not forwarded to reviewer until 01/14/04) - complete 01/28/04;
1/28/2004 / 1/28/2004	LOGIN	Chem - 01/28/04
1/28/2004 /	DATA SCANNED	Chem -
	DATA SENT TO AR	

A-6003-639 (03/03)

0061966

FIELD SCREENING
FINAL DATA DELIVERABLE COVER SHEET

Date: Friday, January 09, 2004

Sample Authorization Form (SAF) Number: F02-001

SDG Number (assigned by Sample Management): FP0146 Daynes 1/14/04

Attachments (check all that apply or N/A):

X	Test Results
N/A	Narrative Summary
N/A	Chain of Custody(s)
X	Logbook Pages
N/A	Anomaly Report

RECEIVED JUN 2 1 2004 EDMC

Total number of pages (including cover sheet): 14

Comments:
200-ZP-1 Process Sampling and Analysis– VOA - Water

THESE TESTS WERE CONDUCTED USING QC-2

JAN 2004 RECEIVED

Anna Thorson — 1/9/04
Analyst Signature

George Kelly — 1/28/04
Reviewer's Signature — Date

Distribution: CPP Sample Management A0-21
Project (Specify)

_____ Requires distribution to listed project personnel by Sample Management (check if applicable)

000001

200-ZP-1 Phase III Pump and Treat System

Process Monitoring Field Screening Results

Advanced Data Copy, SAF F02-001/F02-002

				WATER ANALYSES			AIR ANALYSES		
Sample Location	*HEIS Number*	*Sample/ Analysis Date*	*Sample Time*	*TCM (ug/L)*	*CCl_4 (ug/L)*	*TCE (ug/L)*	*TCM (ppmv)*	*CCl_4 (ppmv)*	*TCE (ppmv)*
Field Blank	B15N25	09/30/03	08:39	<2.0	2.9	<2.0			
Post Tank T-02-01	B15N26	09/30/03	08:40	<2.0	2.8	<2.0			
Post Valve V-01-01	B15N27	09/30/03	08:45	<2.0	2.8	<2.0			
Post Tank T-01-01	B15N28	09/30/03	08:47	17	2800	8.8			
Extraction Well #1	B15RR8	09/30/03	08:49	12	2700	3.0			
Extraction Well #2	B15RR9	09/30/03	08:51	22	4900	12			
Extraction Well #3	B15RT0	09/30/03	09:15	16	3000	11			
Extraction Well #4	B15RT1	09/30/03	09:17	19	2300	5.3			
Extraction Well #4 Duplicate	B15RT2	09/30/03	09:17	18	2200	5.0			
Extraction Well #5	B15RT3	09/30/03	09:23	19	930	3.5			
Post Chiller Air	B16589	09/30/03	11:42		B&K 1302		<1.0	5.7	Not Analyzed For
Stack Effluent	B16590	09/30/03	11:40		B&K 1302		<1.0	<1.0	Not Analyzed For
Field Blank	B15N29	11/05/03	08:11	<2.0	3.8	<2.0			
Post Tank T-02-01	B15N30	11/05/03	08:13	<2.0	3.5	<2.0			
Post Valve V-01-01	B15N31	11/05/03	08:23	<2.0	3.5	<2.0			
Post Tank T-01-01	B15N32	11/05/03	08:35	18	3000	8.1			
Extraction Well #1	B15RT4	11/05/03	08:43	12	3000	2.2			
Extraction Well #2	B15RT5	11/05/03	08:52	25	4900	11			
Extraction Well #3	B15RT6	11/05/03	09:30	18	3100	10			
Extraction Well #4	B15RT7	11/05/03	09:40	21	2500	4.6			
Extraction Well #5	B15RT8	11/05/03	09:58	20	890	2.0			
Extraction Well #5 Duplicate	B15RT9	11/05/03	09:58	21	920	2.2			
Post Chiller Air	B16589	11/05/03	09:09		B&K 1302		<1.0	<1.0	Not Analyzed For
Stack Effluent	B16590	11/05/03	09:12		B&K 1302		<1.0	<1.0	Not Analyzed For
Field Blank	B15N33	11/25/03	08:45	<2.0	13	<2.0			
Post Tank T-02-01	B15N34	11/25/03	08:46	<2.0	13	<2.0			
Post Valve V-01-01	B15N35	11/25/03	08:48	<2.0	14	<2.0			
Post Tank T-01-01	B15N36	11/25/03	08:50	20	2900	9.2			
Extraction Well #1	B15RV0	11/25/03	08:52	13	3000	2.7			
Extraction Well #1	B15RV1	11/25/03	08:52	13	2900	2.5			
Extraction Well #2	B15RV2	11/25/03	08:54	33	5000	12			
Extraction Well #3	B15RV3	11/25/03	09:10	19	3500	12			
Extraction Well #4	B15RV4	11/25/03	09:12	23	2700	5.7			
Extraction Well #5	B15RV5	11/25/03	09:18	22	1200	3.3			
Post Chiller Air (Z-A2-01)	B16593	11/25/03	12:04		B&K 1302		<1.0	4.8	Not Analyzed For
Stack Effluent (Z-A3-01)	B16594	11/25/03	12:02		B&K 1302		<1.0	<1.0	Not Analyzed For
Field Blank	B15N37	12/23/03	07:25	<2.0	41	<2.0			
Post Tank T-02-01	B15N38	12/23/03	07:26	<2.0	40	<2.0			
Post Valve V-01-01	B15N39	12/23/03	07:30	<2.0	38	<2.0			
Post Tank T-01-01	B15N40	12/23/03	07:33	24	2900	16			
Extraction Well #1	B15RV6	12/23/03	07:35	15	2800	<2.0			
Extraction Well #2	B15RV7	12/23/03	07:37	32	5100	26			
Extraction Well #2 Duplicate	B15RV8	12/23/03	07:37	31	4900	24			
Extraction Well #3	B15RV9	12/23/03	07:44	23	3100	23			
Extraction Well #4	B15RW0	12/23/03	07:46	27	2300	<2.0			
Extraction Well #5	B15RW1	12/23/03	07:50	26	980	<2.0			
Post Chiller Air (Z-A2-01)	B16595	12/23/03	08:30		B&K 1302		<1.0	5.0	Not Analyzed For
Stack Effluent (Z-A3-01)	B16596	12/23/03	08:32		B&K 1302		<1.0	<1.0	Not Analyzed For

CM = Chl r f rm, CCl = C rb ntetr chl ride, CE = richl r ethylene

E00000

200-ZP-1 Process Analysis M.D. Thorsen / GS / M.D. Thorsen

MOBILE LABORATORY DATA/LOG SHEET (Logbook HNF-N-293 1, SAF F02-001/F02-002)

Site Name: 200-ZP-1 Phase III Date: 9/30/03

Sample Number	HEIS Number	Sample Time	Sample Type	Sampler (Initials)	Analysis Time	Analytical Results			Comments
						TCM ug/L	CCl4 ug/L	TCE ug/L	
DI Blank	—	0730	Water	TMJ	~~0940~~ 1032	<2.0	<2.0	<2.0	hs012.d
100ug/L Cal. Check	—	1018	Water	TMJ	1043 ~~0951~~	98 98%	82 82%	97 97%	hs013.d; Acceptable recoveries.
DI Blank	—	0730	Water	TMJ	~~1002~~ 1054	<2.0	<2.0	<2.0	hs014.d
Field Blank	B15N25	0839	Water	TMJ	1117	<2.0	2.9	<2.0	hs016.d;
Z-T2-01	B15N26	0840	Water	TMJ	1129	<2.0	2.8	<2.0	hs017.d;
Z-V1-01	B15N27	0845	Water	TMJ	1140	<2.0	2.8	<2.0	hs018.d
Z-T2-02 MS	-	0840	Water	TMJ	1151	9.3 93%	7.9 79%	6.3 63%	hs019.d
Z-T2-03 MSD	-	0840	Water	TMJ	1202	9.3 93%	7.9 79%	6.7 67%	hs020.d(RPD=0.39)
Z-T1-01	B15N28	0847	Water	TMJ	1213	17	2839	8.8	hs021.d
Z-W1-01	B15RR8	0849	Water	TMJ	1224	12	2748	3.0	hs022.d
Z-W2-01	B15RR9	0851	Water	TMJ	1235	22	4909	~~3.0~~ 12	hs023.d
Z-W3-01	B15RT0	0915	Water	TMJ	1246	16	3027	11	hs024.d; Manifold Bldg
Z-W4-01	B15RT1	0917	Water	TMJ	1257	19	2273	5.3	hs025.d; Manifold Bldg
Z-W4-01	B15RT2	0917	Water	TMJ	1308	18	2180	5.0	hs026.d; Manifold Bldg (RPD=4.2)
Z-W5-01	B15RT3	0923	Water	TMJ	1319	19	929	3.5	hs027.d; Manifold Bldg
DI Blank	—	0730	Water	TMJ	1330	<2.0	<2.0	<2.0	hs028.d
3000ug/L Cal. check	—	1258	Water	TMJ	1341	2958 98%	3008 100%	3305 110%	hs029.d; Acceptable recoveries
DI Blank	—	0730	Water	TMJ	1352	<2.0	<2.0	<2.0	hs030.d
						ppm	ppm	ppm	
Blank	—	—	Air	TMJ	1311	<1.0	<1.0	<1.0	B&K 1302
25.5 ppm Cal. Check	—	—	Air	TMJ	1313	<1.0	22.0 86%	<1.0	B&K 1302 Acceptable recovery.
Z-A3-01	B16590	1140	Air	TMJ	1315	<1.0	<1.0	<1.0	B&K 1302
Z-A2-01	B16589	1142	Air	TMJ	1317	<1.0	5.7	<1.0	B&K 1302
Blank	—	—	Air	TMJ	1319	<1.0	<1.0	<1.0	B&K 1302

For instrument operation information, please refer to logbook HNF-N-292 1, page 32

M.D. Thorsen / M.D. Thorsen 10/02/03

Reviewed By M.A. BAECHLER M.A. Baechler 11/10/03

100000
200-ZP-1 Quarterly

Mathansen/GS/Mathansen

MOBILE LABORATORY DATA/LOG SHEET (Logbook HNF-N-293 1, SAF F02-001/F02-002)

Site Name: 200-ZP-1 Phase III Quarterly **Date: 11/05/03**

Sample Number	HEIS Number	Sample Time	Sample Type	Sampler (Initials)	Analysis Time	Analytical Results TCM ug/L	CCl4 ug/L	TCE ug/L	Comments
DI Blank	—	0700	Water	TMJ	0929	<2.0	<2.0	<2.0	hs012.d
100ug/L Cal. Check	—	0905	Water	TMJ	0940	114 114%	108 108%	106 106%	hs013.d; Acceptable recoveries.
DI Blank	—	0700	Water	TMJ	0951	<2.0	<2.0	<2.0	hs014.d
Field Blank	B15N29	0811	Water	TMJ	1023	<2.0	3.8	<2.0	hs017.d;
Z-T2-01	B15N30	0813	Water	TMJ	1034	<2.0	3.5	<2.0	hs018.d;
Z-V1-01	B15N31	0823	Water	TMJ	1045	<2.0	3.5	<2.0	hs019.d
Z-V1-02 MS	-	0823	Water	TMJ	1055	10.3 103%	9.18 ~~91.8~~ ① 92%	11.8 118%	hs020.d
Z-V1-03 MSD	-	0823	Water	TMJ	1106	10.1 101%	9.11 ~~91.1~~ ① 91%	12.1 111%	hs021.d (RPD= 0.77) ① TMJ 12/16/03
Z-T1-01	B15N32	0835	Water	TMJ	1117	18	2989	8.1	hs022.d
Z-W1-01	B15RT4	0843	Water	TMJ	1128	12	2986	2.2	hs023.d
Z-W2-01 TMJ 1-21-04	B15RT5	0852	Water	TMJ	1139	25	4905	11	hs024.d
Z-W3-0~~2~~1	B15RT6	0930	Water	TMJ	1150	18	3060	9.9	hs025.d
Z-W4-01	B15RT7	0940	Water	TMJ	1200	21	2493	4.6	hs026.d; Manifold Bldg
Z-W5-01	B15RT8	0958	Water	TMJ	1211	20	885	2.0	hs027.d; Manifold Bldg
Z-W5-02	B15RT9	0958	Water	TMJ	1222	21	918	2.2	hs028.d; Manifold Bldg. (RPD= 2.43)
DI Blank	—	0700	Water	TMJ	1233	<2.0	<2.0	<2.0	hs030.d
3000ug/L Cal. check	—	1230	Water	TMJ	1254	3039 101%	3041 101%	3392 113%	hs031.d; Acceptable recoveries
DI Blank	—	0700	Water	TMJ	1305	<2.0	<2.0	<2.0	hs032.d
						ppm	ppm	ppm	
Blank	—	—	Air	TMJ	1342	<1.0	<1.0	NA	B&K 1302
25.5 ppm Cal. Check	—	—	Air	TMJ	1344	<1.0	22.1 87%	NA	B&K 1302 Acceptable recovery.
Z-A3-01	B16592	0909	Air	TMJ	1346	<1.0	<1.0	NA	B&K 1302
Z-A2-01	B16591	0912	Air	TMJ	1348	<1.0	<1.0*	NA	B&K 1302 * sample taken after plant shut down.
Blank	—	—	Air	TMJ	1350	<1.0	<1.0	NA	B&K 1302

For instrument operation information, please refer to logbook HNF-N-292 1, page 3~~8~~2. TMJ 11/6/03

Mathansen/Mathansen 11/6/03

Reviewed
By M.A. BAECHLER 11/12/03

900000

200-ZP-1 Process Analysis

Mjohansen/GS/Mjohansen

MOBILE LABORATORY DATA/LOG SHEET (Logbook HNF-N-293 1, SAF F02-001/F02-002)

Site Name: 200-ZP-1 Phase III **Date: 11/25/03**

Jamaru Johansen 11/25/03

Sample Number	HEIS Number	Sample Time	Sample Type	Sampler (Initials)	Analysis Time	Analytical Results TCM ug/L	CCl4 ug/L	TCE ug/L	Comments
DI Blank	—	0742	Water	TMJ	1008	<2.0	<2.0	<2.0	hs012.d
100ug/L Cal. Check	—	0945	Water	TMJ	1019	103 103%	99 99%	99 99%	hs013.d; Acceptable recoveries.
DI Blank	—	0742	Water	TMJ	1030	<2.0	<2.0	<2.0	hs014.d
Field Blank	B15N33	0845	Water	TMJ	1102	<2.0	13	<2.0	hs017.d;
Z-T2-01	B15N34	0846	Water	TMJ	1113	<2.0	13	<2.0	hs018.d;
Z-V1-01	B15N35	0848	Water	TMJ	1124	<2.0	14	<2.0	hs019.d
Z-T2-02 MS	-	0846	Water	TMJ	1135	12.2 122%	13.3 133%	14.2 142%	hs020.d
Z-T2-03 MSD	-	0846	Water	TMJ	1147	13.0 ~~10.2~~ ① 130 ~~102%~~	13.9 ~~11.1~~ ① 139 ~~111%~~	14.5 ~~13.1~~ ① 145 ~~131%~~	hs021.d ~~(RPD=18.0)~~ TMJ 11-25-03 RPD=4.41 DMS 1-9-04 ~~16.3~~
Z-T1-01	B15N36	0850	Water	TMJ	1158	20	2925	9.2	hs022.d
Z-W1-01	B15RV0	0852	Water	TMJ	1208	13	3031	2.7	hs023.d
Z-W1-02	B15RV1	0852	Water	TMJ	1220	13	2940	2.5	hs024.d (RPD=3.05)
Z-W2-01	B15RV2	0854	Water	TMJ	1231	33	4950	12	hs025.d
Z-W3-01	B15RV3	0910	Water	TMJ	1242	19	3483	12	hs026.d; Manifold Bldg
Z-W4-01	B15RV4	0912	Water	TMJ	1253	23	2662	5.7	hs027.d; Manifold Bldg
Z-W5-01	B15RV5	0918	Water	TMJ	1304	22	1222	3.3	hs028.d; Manifold Bldg
DI Blank	—	0742	Water	TMJ	1315	<2.0	<2.0	<2.0	hs030.d
3000ug/L Cal. check	—	1315	Water	TMJ	1327	3252 108%	3142 105%	3212 107%	hs031.d; Acceptable recoveries
DI Blank	—	0742	Water	TMJ	1338	<2.0	<2.0	<2.0	hs032.d
						ppm	ppm	ppm	
Blank	—	—	Air	TMJ	1208	<1.0	<1.0	NA	B&K 1302
25.5 ppm Cal. Check	—	—	Air	TMJ	1210	<1.0	24.7 97%	NA	B&K 1302 Acceptable recovery.
Z-A3-01	B16594	1202	Air	TMJ	1212	<1.0	<1.0	NA	B&K 1302
Z-A2-01	B16593	1204	Air	TMJ	1214	<1.0	4.83	NA	B&K 1302
Blank	—	—	Air	TMJ	1216	<1.0	<1.0	NA	B&K 1302

For instrument operation information, please refer to logbook HNF-N-292 1, page 35

Mjohansen/Mjohansen 12/17/03

Reviewed By [illegible]

900000

200-ZP-1 Monthly / 200-ZP-1 Aquifer

Mathewson / GS/Anderson

MOBILE LABORATORY DATA/LOG SHEET (Logbook HNF-N-293 1, SAF F02-001/F02-002/F04-007)

Site Name: 200-ZP-1 Phase III / 200-ZP-1 RI/FS 3-D Aquifer Characterization **Date: 12/23/03**

Sample Number	HEIS Number	Sample Time	Sample Type	Sampler (Initials)	Analysis Time	Analytical Results			Comments
						TCM ug/L	CCl4 ug/L	TCE ug/L	
DIBlank	—	0637	Water	TMJ	0911	<2.0	<2.0	<2.0	hs012.d
100ug/L Cal. Check	—	0900	Water	TMJ	0922	119 119%	126 126%	134 134%	hs013.d; Acceptable recoveries.
DIBlank	—	0637	Water	TMJ	0933	<2.0	<2.0	<2.0	hs014.d
Field Blank	B15N37	0725	Water	TMJ	1005	<2.0	41	<2.0	hs017.d;
Z-T2-01	B15N38	0726	Water	TMJ	1016	<2.0	40	<2.0	hs018.d;
Z-V1-01	B15N39	0730	Water	TMJ	1027	<2.0	38	<2.0	hs019.d;
Z-V1-02 MS	-	0730	Water	TMJ	1038	73 73%	111 111%	155 155%	hs020.d;
Z-V1-03 MSD	-	0730	Water	TMJ	1048	70 70%	91 91%	145 145%	hs021.d (RPD=19.8).
Z-T1-01	B15N40	0733	Water	TMJ	1059	24	2937	16	hs022.d;
C4238/ 299-W13-1; 458'	B18552	1349	Water	TMJ	1110	57	643	3.5	hs023.d; Sample Date: 12/19/03; PCE= <2.0 ug/L
C4238/ 299-W13-1; 488'	B18553	1151	Water	TMJ	1121	74	510	<2.0	hs024.d; Sample Date: 12/20/03; PCE= <2.0 ug/L
C4238/ 299-W13-1; 527'	B18554	1020	Water	TMJ	1132	18	132	<2.0	hs025.d; Sample Date: 12/22/03; PCE= <2.0 ug/L
Z-W1-02	B15RV6	0735	Water	TMJ	1143	15	2777	<2.0	hs026.d;
Z-W2-01	B15RV7	0737	Water	TMJ	1153	32	5100	26	hs027.d;
Z-W2-01	B15RV8	0737	Water	TMJ	1204	31	4883	24	hs028.d; (RPD= 4.35)
Z-W3-01	B15RV9	0744	Water	TMJ	1215	23	3131	23	hs029.d; Manifold Bldg
Z-W4-01	B15RW0 TMJ 12-21-04	0746	Water	TMJ	1226	27	2293	<2.0	hs030.d; Manifold Bldg
Z-W5-01	B15RW~~0~~1	0750	Water	TMJ	1237	26	981	<2.0	hs031.d; Manifold Bldg
DI Blank	—	0637	Water	TMJ	1248	<2.0	<2.0	<2.0	hs032.d;
3000ug/L Cal. check	—	1345	Water	TMJ	1258	3166 105%	3445 115%	3267 109%	hs033d; Acceptable recoveries
DI Blank	—	0637	Water	TMJ	TMJ 1-9-04 ~~1309~~ 1320	<2.0	<2.0	<2.0	hs034.d;
						ppm	ppm	ppm	
Blank	—	—	Air	TMJ	1029	<1.0	<1.0	NA	B&K 1302
25.5 ppm Cal. Check	—	—	Air	TMJ	1031	<1.0	23.4 92%	NA	B&K 1302 Acceptable recovery.
Z-A3-01	B16596	0832	Air	TMJ	1033	<1.0	<1.0	NA	B&K 1302
Z-A2-01	B16595	0830	Air	TMJ	1035	<1.0	4.96	NA	B&K 1302
Blank	—	—	Air	TMJ	1037	<1.0	<1.0	NA	B&K 1302

For instrument operation information, please refer to logbook HNF-N-292 1, page 38

TMJ Johansen / GS/Anderson 12/29/03

Reviewed By M.A. Bachler 1/8/04

Lamar Anderson 12/29/03

32 400000

200-ZP-1 Process Analysis TMJohansen/GS/[illegible]

200-ZP-1 Daily Activity Log
(Logbook HNF-N-292 1, SAF F02-001/F02-002)
Date: 09/30/03

0730	T.M. Johansen arrived on-site at laboratory trailer located at 200-ZP-1 to perform sampling and analysis of the 200-ZP-1 pump and treat. Turned on HP 5890 gas chromatograph S/N 3235A47685 and HP 7694 headspace autosampler S/N 3617I01945. Loaded methods HSECDFID.MTH (HP 5890) and HSECDFID.HSM (HP 7694).
0735	Turned on B&K 1302.
0817	Split flow = 40.0 mL/min. Septum purge = 2.86 mL/min.
0823	Prepared new warm-up standards of 5 and 10 ug/L. Created sample sequence "Z093003B.S"
0830	Prepared calibration standards of 5, 100, 200, 2000, 4000, and 8000 ug/L.
0820	Exited laboratory trailer to collect process water and air samples.
0922	Started calibration of HP 5890 gas chromatograph.
0930	Returned to laboratory trailer with samples. Process samples from extraction well E0-3, E0-4, and E0-5 collected from manifold house. Extraction well 6 is off-line.
1018	Completed calibration of HP 5890 gas chromatograph. Calibration curves are acceptable.
1020	Prepared 100 ug/L calibration check standard.
1051	100 ug/L calibration check: DCM = 97 (97%), TCM = 98 (98%), CCl_4 = 82 (82%) TCE = 97 (97%), PCE = 99 (99%). Acceptable recoveries.
1120	Prepared matrix spike and matrix spike duplicate. Added 2 uL of 50 ug/mL of LCS parent stock to 10 ml of Z-T2-02 and –03 for a total of 10 ug/L.
1125	Started analysis of process water samples.
1151	Matrix spike recovery for Z-T2-02 = 79%
1202	Matrix spike duplicate recovery for Z-T2-03 = 79% Note: Relative Percent Difference = 0.39%
1258	Prepared 3000 ug/L calibration check standard.
1311	Started analysis of process air samples using the B&K 1302 FTIR S/N 1715232 gas analyzer. For information on this instrument, see logbook HNF-N-294 1.
1319	Completed analysis of process water samples.
1321	Completed analysis of process air samples. Analysis results are found on the data sheet in logbook HNF-N-293-1.
1341	3000 ug/L calibration check: DCM = 3059 (102 %), TCM = 2953 (98 %), CCl_4 = 3008 (100 %), TCE = 3305 (110 %), PCE = 3008 (100 %). Acceptable Rec.
1400	Disposed of liquid and solid waste.
1410	Loaded standby method, shut down equipment, left site.

Data recorded in real time using a laptop computer.

[illegible] 10/03/03

TMJohansen/[illegible] 10/03/03

Reviewed By M.A. BAECHLER

M.A. Baechler 11/10/03

800000

200-ZP-1 Quarterly TMJohansen/65/TMJohansen

200-ZP-1 Daily Activity Log
(Logbook HNF-N-292 1, SAF F02-001/F02-002)
Date: 11/05/03

0700	T. M. Johansen arrived on-site at laboratory trailer located at 200-ZP-1 to perform quarterly sampling and analysis of the 200-ZP-1 pump and treat. Turned on HP 5890 gas chromatograph S/N 3235A47685 and HP 7694 headspace autosampler S/N 3617I01945. Loaded methods HSECDFID.MTH (HP 5890) and HSECDFID.HSM (HP 7694).
0711	Split flow = 40.1 mL/min. Septum purge = 2.65 mL/min.
0715	Prepared new warm-up standards of 5 and 10 ug/L. Created sample sequence "Z110503.S" Prepared new 1000 ug/mL working standard (CAL) from 52893, Lot A011754 Parent stock (2000 ug/mL). 250 uL methanol + 250 uL parent stock. 110503A EXP. 020604
0720	Prepared calibration standards of 5, 100, 200, 2000, 4000, and 8000 ug/L.
0800	Exited laboratory trailer to collect process water and air samples. See Page 141 For additional Prep. info
0824	Started calibration of HP 5890 gas chromatograph.
0905	Prepared 100 ug/L calibration check standard.
0918	Completed calibration of HP 5890 gas chromatograph. Calibration curves are acceptable.
1005	Returned to laboratory trailer with samples. Process samples from extraction well E0-3, E0-4, and E0-5 collected from manifold house. Extraction well 6 is off-line.
0940	100 ug/L calibration check: DCM = 100 (100 %), TCM = 114 (114 %), CCl_4 = 108 (108), TCE = 106 (106 %), PCE = 106 (106 %). Acceptable recoveries.
1035	Prepared matrix spike and matrix spike duplicate. Added 2 uL of 50 ug/mL of LCS parent stock to 10 ml of Z-V1-02 and –03 for a total of 10 ug/L.
1023	Started analysis of process water samples.
1030	Turned on B&K 1302.
1055	Matrix spike recovery for Z-V1-02 = 92%
1106	Matrix spike duplicate recovery for Z-V1-03 = 91% Note: Relative Percent Difference = 0.77%
1222	Completed analysis of process water samples.
1230	Prepared 3000 ug/L calibration check standard.
1254	3000 ug/L calibration check: DCM = 3159 (105 %), TCM = 3039 (101 %), CCl_4 = 3041 (101 %), TCE = 3392 (113 %), PCE = 3024 (101 %). Acceptable Rec.
1342	Started analysis of process air samples using the B&K 1302 FTIR S/N 1732828 gas analyzer. For information on this instrument, see logbook HNF-N-294 1.
1352	Completed analysis of process air samples. Analysis results are found on the data sheet in logbook HNF-N-293-1.
1415	Disposed of liquid and solid waste.
1430	Loaded standby method, shut down equipment, left site.

Data recorded in real time using a laptop computer.

TMJohansen 11/6/03

Reviewed By M.A. BAECHLER

TMJohansen/TMJohansen 11/06/03 M.A. Baechler 11/10/03

600000

200-ZP-1 Process Analysis

Thomansen/GS/[illegible]

200-ZP-1 Daily Activity Log (Logbook HNF-N-292 1, SAF F02-001/F02-002) Date: 11/25/03

0742	T.M. Johansen arrived on-site at laboratory trailer located at 200-ZP-1 to perform quarterly sampling and analysis of the 200-ZP-1 pump and treat. Turned on HP 5890 gas chromatograph S/N 3235A47685 and HP 7694 headspace autosampler S/N 3617I01945. Loaded methods HSECDFID.MTH (HP 5890) and HSECDFID.HSM (HP 7694).
0750	Split flow = 40.1 mL/min. Septum purge = 2.56 mL/min.
0755	Turned on B&K 1302.
0810	Prepared new warm-up standards of 5 and 10 ug/L. Created sample sequence "Z112503.S"
0825	Prepared calibration standards of 5, 100, 200, 2000, 4000, and 8000 ug/L.
0838	Exited laboratory trailer to collect process water and air samples.
0852	Started calibration of HP 5890 gas chromatograph.
1000	Prepared 100 ug/L calibration check standard.
0925	Returned to laboratory trailer with samples. Process samples from extraction well E0-3, E0-4, and E0-5 collected from manifold house. Extraction well 6 is off-line.
0946	Completed calibration of HP 5890 gas chromatograph. Calibration curves are acceptable.
1000	Prepared matrix spike and matrix spike duplicate. Added 2 uL of 50 ug/mL of LCS parent stock to 10 ml of Z-T2-02 and –03 for a total of 10 ug/L.
1019	100 ug/L calibration check: DCM = 96 (96%), TCM = 103 (103 %), CCl_4 = 99 (99), TCE = 99 (99 %), PCE = 98 (98%). Acceptable recoveries.
1102	Started analysis of process water samples.
1208	Started analysis of process air samples using the B&K 1302 FTIR S/N 1732828 gas analyzer. For information on this instrument, see logbook HNF-N-294 1.
1135	Matrix spike recovery for Z-T2-02 = 133%
1147	Matrix spike duplicate recovery for Z-T2-03 = 111% Note: Relative Percent Difference = 16.3%
1218	Completed analysis of process air samples. Analysis results are found on the data sheet in logbook HNF-N-293-1.
1304	Completed analysis of process water samples.
1310	Prepared 3000 ug/L calibration check standard.
1327	3000 ug/L calibration check: DCM = 3188 (106 %), TCM = 3252 (108 %), CCl_4 = 3142 (105 %), TCE = 3212 (107 %), PCE = 3245 (108 %).Acceptable Rec.
1400	Disposed of liquid and solid waste.
1415	Loaded standby method, shut down equipment, left site.

Data recorded in real time using a laptop computer.

Thomansen/[illegible] 12/17/03

Reviewed By [illegible] 12/17/03

38 010000

200-ZP-1 RI/FS
3-D Aquifer Tube Charact. / 200-ZP-1 Process

TMJohansen/GS
TMJohansen

200-ZP-1 Daily Activity Log
(Logbook HNF-N-292 1,
SAF F02-001/F02-002/F04-007)
Date: 12/23/03

0637	T. M. Johansen arrived on-site at laboratory trailer located at 200-ZP-1 to perform quarterly sampling and analysis of the 200-ZP-1 pump and treat. Turned on HP 5890 gas chromatograph S/N 3235A47685 and HP 7694 headspace autosampler S/N 3617I01945. Loaded methods HSECDFID.MTH (HP 5890) and HSECDFID.HSM (HP 7694).
0655	Split flow = 40.4 mL/min. Septum purge = 2.41 mL/min.
0700	Turned on B&K 1302.
0710	Prepared new warm-up standards of 5 and 10 ug/L. Created sample sequence "Z122303.S"
0715	Prepared calibration standards of 5, 100, 200, 2000, 4000, and 8000 ug/L.
0720	Exited laboratory trailer to collect process water and air samples.
0755	Started calibration of HP 5890 gas chromatograph.
0900	Prepared 100 ug/L calibration check standard.
0800	Returned to laboratory trailer with samples. Process samples from extraction well E0-3, E0-4, and E0-5 collected from manifold house. Extraction well 6 is off-line.
0850	Completed calibration of HP 5890 gas chromatograph. Calibration curves are acceptable.
0900	Prepared 299-W13-1 samples for analysis. Samples were not pre-filtered due to the collection method of a bailer. Transfered material from each sample into a syringe with a 0.45 uL filter attached. Filtered each sample into a clean 20 mL HP vial. ① 119 119 ① ① MAB 1/6/04
0922	100 ug/L calibration check: DCM = 134 (134%), TCM = ~~120~~ (~~120~~ %), CCl_4 = 126 (126), ~~TCE = 135 (135 %)~~, PCE = 126 (126%). Acceptable recoveries. TCE = 134 (134%)
1000	Prepared matrix spike and matrix spike duplicate. Added 2 uL of 50 ug/mL of LCS parent stock to 10 ml of Z-V1-02 and –03 for a total of 10 ug/L.
1005	Started analysis of process water samples.
1029	Started analysis of process air samples using the B&K 1302 FTIR S/N 1732828 gas analyzer. For information on this instrument, see logbook HNF-N-294 1.
1038	Matrix spike recovery for Z-V1-02 = 111%
1039	Completed analysis of process air samples. Analysis results are found on the data sheet in logbook HNF-N-293-1.
1106	Matrix spike duplicate recovery for Z-V1-03 = 91% Note: Relative Percent Difference = 19.8%
1237	Completed analysis of process water samples.
1300	Prepared 3000 ug/L calibration check standard.
1320	3000 ug/L calibration check: DCM = 3092 (103 %), TCM = 3166 (105 %), CCl_4 = 3445 (115 %), TCE = 3267 (109 %), PCE = 3331 (111 %).Acceptable Rec.
1345	Disposed of liquid and solid waste.
1415	Loaded standby method, shut down equipment, left site.

Data recorded in real time using a laptop computer.

TMJ 12/29/03

TMJohansen/TMJohansen 12/29/03

Reviewed
By M.A. BAECHLER
M.A. Baechler 1/6/04

Tamara Johansen 12/29/03

110010

200-ZP-1 Process Analysis TMJohansen/GS/TMJohansen 10/8/03

200-ZP-1 Daily Activity Log
(Logbook HNF-N-294 1, F02-002)
Date: 9/30/03

0730	T. M. Johansen arrived on-site at laboratory trailer located at 200-ZP-1 to perform VOA sampling and analysis of the 200-ZP-1 pump and treat.
0735	Turned on B&K 1302 FTIR gas analyzer, serial number 1732828 to warm up instrument prior to analysis. The B&K 1302 is set up using cross compensation factory calibrations. B&K serial number 1715232 is off-site for calibration.
1200	Placed instrument into automatic sampling mode (ambient air).
1309	Turned off automatic sampling mode.
1311	Analyzed blank air sample: TCM = < 1.0 , CCl_4 = < 1.0 ,TCE = NAF .
1313	Analyzed 25.5 ppm calibration standard. CCl_4 = 22.0 (86 %). Acceptable recovery.
1315	Started analysis of 200-ZP-1 samples.
1321	Completed analysis of 200-ZP-1 samples.
1325	Turned instrument off.

Data was recorded in real time using a laptop computer.

Tamara Johansen 10/8/03

TMJ 10/8/03

TMJohansen/TMJohansen 10/8/03

Reviewed By: M.A. BAECHLE M.A. Baechle 11/10/03

000012

25

200-ZP-1 Process Analysis

TMJohansen/GSBaechler 11/5/03

200-ZP-1 Daily Activity Log
(Logbook HNF-N-294 1, F02-002)
Date: 11/05/03

0700	T. M. Johansen arrived on-site at laboratory trailer located at 200-ZP-1 to perform VOA sampling and analysis of the 200-ZP-1 pump and treat.
1030	Turned on B&K 1302 FTIR gas analyzer, serial number 1732828 to warm up instrument prior to analysis. The B&K 1302 is set up using cross compensation factory calibrations. B&K serial number 1715232 is off-site for calibration.
1033	Placed instrument into automatic sampling mode (ambient air).
1340	Turned off automatic sampling mode.
1342	Analyzed blank air sample: TCM = < 1.0 , CCl_4 = < 1.0 ,TCE = NAF
1344	Analyzed 25.5 ppm calibration standard. CCl_4 = 22.1 (87 %). Acceptable recovery.
1346	Started analysis of 200-ZP-1 samples.
1352	Completed analysis of 200-ZP-1 samples.
1355	Turned instrument off.

Data was recorded in real time using a laptop computer.

Tamara Johansen 11/06/03

TMJ 11/06/03

TMJohansen TMJohansen 11/06/03

Reviewed By BAECHLER

M.G. Baechler 11/10/03

210000

200-ZP-1 Process

HNF-N-294-1

200-ZP-1 Daily Activity Log
(Logbook HNF-N-294 1, F02-002)
Date: 11/25/03

0742	T. M. Johansen arrived on-site at laboratory trailer located at 200-ZP-1 to perform VOA sampling and analysis of the 200-ZP-1 pump and treat. 1715232 TMJ 1/5/04
0755	Turned on B&K 1302 FTIR gas analyzer, serial number ~~1732828~~ to warm up instrument prior to analysis. The B&K 1302 is set up using cross compensation factory calibrations. ~~B&K serial number 1715232 is off site for calibration.~~ TMJ 1/5/04
0757	Placed instrument into automatic sampling mode (ambient air).
1200	Turned off automatic sampling mode.
1208	Analyzed blank air sample: TCM = < 1.0 , CCl_4 = < 1.0 ,TCE = NAF .
1210	Analyzed 25.5 ppm calibration standard. CCl_4 = 24.7 (97 %). Acceptable recovery.
1212	Started analysis of 200-ZP-1 samples.
1218	Completed analysis of 200-ZP-1 samples.
1220	Turned instrument off.

Data was recorded in real time using a laptop computer.

Tom Johansen 1/5/04

TMJ 1/5/04

Reviewed By

TMJohansen / TMJohansen 1/5/04

200-ZP-1 Process

HNF-N-294-1

200-ZP-1 Daily Activity Log
(Logbook HNF-N-294 1, F02-002)
Date: 12/23/03

0637	T. M. Johansen arrived on-site at laboratory trailer located at 200-ZP-1 to perform VOA sampling and analysis of the 200-ZP-1 pump and treat. 1715232 TMJ 1-5-04
0640	Turned on B&K 1302 FTIR gas analyzer, serial number ~~1732828~~ to warm up instrument prior to analysis. The B&K 1302 is set up using cross compensation factory calibrations. ~~B&K serial number 1715232 is off site for calibration.~~ TMJ 1/5/04
0645	Placed instrument into automatic sampling mode (ambient air).
1020	Turned off automatic sampling mode.
1029	Analyzed blank air sample: TCM = < 1.0 , CCl_4 = <1.0 ,TCE = NAF .
1031	Analyzed 25.5 ppm calibration standard. CCl_4 = 23.4 (92 %). Acceptable recovery.
1033	Started analysis of 200-ZP-1 samples.
1039	Completed analysis of 200-ZP-1 samples.
1043	Turned instrument off.

Data was recorded in real time using a laptop computer.

TMJ 1/5/04

TMJ 1/5/04

TMJohansen/TMJohansen 1/5/04

Reviewed
By_____

200-ZP-1 Quarterly Sampling Mathanson/GS/Mathanson

200-ZP-1 Quarterly Sampling
Field Instrument Readings
Logbook HNF-N-295 1
11/05/03
SAF F02-001/F02-002

0650	M. A. Baechler arrived at the M0-026 pump and treat to calibrate pH, turbidity, and conductivity meters for quarterly sampling.
0655	Verified calibration of HACH model 2100P turbidity meter S/N 950900008699, with Gelex standards: 5.54 = 5.69, 48.6 = 50.5, 514 = 528.
0700	Calibrated Orion model 290A pH meter, S/N 008326, with pH 7.00 buffer, lot number 027675-24, expires 12/04. Meter reading 7.025. Second calibration point pH 10.00 buffer, lot number 011794-24, expires 12/03. Meter reading 10.099. Calibration slope 98.8.
0705	Calibrated Orion model 124 conductivity meter, S/N 51448005, with Fisher conductivity calibrator (1000 uS/cm), analysis number 2895, expires 4/04. Adjusted meter to read 1015 uS/cm.
-	Calibrated YSI dissolved oxygen meter model 55/12ft S/N 95J37630 in field, per manufacturer's instructions. Changed membrane and DI solution.

Sample Location	Valve Number	Eberline/ Recra	Field Screening	Time	Date	Lab	pH	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity (uS/cm)	Turbidity (NTU)
Field Blank	N/A	N/A	B15N29	8:11	11/05/2003	Eberline/ Recra	-	-	-	-	-
Effluent Surge Tank / T-02	1/2-101-V13	B17XL4	B15N30	8:13	11/05/2003	Eberline/ Recra	8.20	19.3	8.82	762	0.33
Air Stripper / V1-01	3/4-TSL03-V06	B17XL5	B15N31	8:23	11/05/2003	Eberline/ Recra	8.28	19.6	9.01	583	0.31
Influent Surge Tank / T-01	1/2-TSL02-V14	B17XL6	B15N32	8:35	11/05/2003	Eberline/ Recra	7.82	20.1	9.04	580	0.39
Extraction Well #1	PI-E01A	B17XL7	B15RT4	8:43	11/05/2003	Eberline/ Recra	7.91	19.7	8.26	468	0.82
Extraction Well #2	PI-E02A	B17XL8	B15RT5	8:52	11/05/2003	Eberline/ Recra	7.79	20.4	8.16	662 ~~567~~ TMJ 11-10-03	1.01
Extraction Well #3	PI-E04A	B17XL9	B15RT6	9:30	11/05/2003	Eberline/ Recra	7.73	18.3	11.7	592	4.25
Extraction Well #4	PI-E04A	B17XM0	B15RT7	9:40	11/05/2003	Eberline/ Recra	7.75	16.2	8.12	939	0.46
Extraction Well #5	PI-E05A	B17XM1	B15RT8	9:58	11/05/2003	Eberline/ Recra	7.84	18.8	7.74	409	0.46
Extraction Well #5 Duplicate	PI-E03A	B17XM2	B15RT9	9:58	11/05/2003	Eberline/ Recra	7.84	18.8	7.74	409	0.46
~~0909~~	~~Collected vapor samples from the stack effluent, sample point AS-3 (B17XM3).~~ TMJ 11-05-03 Air samples cancelled due to plant shut down.										
~~0912~~	~~Collected vapor samples from the post chiller air, sample point AS-2 (B17XM4).~~										
—	Bottle lot numbers: 1 L poly: C3079020, 500 mL poly: L2295010, 125 mL poly: L/4 2143050, 40 mL amber glass preserved VOA: HA 3175170										

Mathanson/GS/Mathanson 11/06/03

Reviewed By M. A. BAECHLER M.A. Baechler 11/10/03

Mathanson 11/06/03