

**WEEKLY PROGRESS REPORT
SEPTEMBER 12 – SEPTEMBER 18, 2005**

**REMOVAL ACTION
NW NATURAL “GASCO” SITE**

Prepared for Submittal to

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September 20, 2005

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1 INTRODUCTION

This weekly progress report is a requirement of the U.S. Environmental Protection Agency (EPA) approved Removal Action Project Plan (RAPP) and Section II.5 of the EPA Statement of Work (SOW) for the removal action at the "Gasco" site (Site). The RAPP was prepared to comply with requirements described in the EPA Administrative Order on Consent (Order) for the Site. Consistent with the schedule submitted to EPA (Appendix I of the RAPP), the construction contractor (Sevenson Environmental Services [SES]) initiated construction activities at the Site on August 22, 2005 following the pre-construction meeting. The remainder of this progress report documents the removal action activities that were conducted during the week of September 12 – September 18, 2005.

2 CONSTRUCTION ACTIVITIES

The following section describes the construction activities conducted at the Site from September 12, 2005 through September 18, 2005.

2.1 Site Construction Activities

2.1.1 In-Water Construction Activities

SES conducted the following in-water construction activities:

- Approximately 800-900 cubic yards of material were dredged from the inner removal area on September 12, after which, a bathymetry survey was conducted by the project surveyor.
- Dredging continued on September 13, 2005. Approximately 1000-1200 cubic yards of material were dredged from the inner removal area and a bathymetry survey was then conducted.
- Approximately 500-600 cubic yards of material were dredged from the inner containment area on September 14, 2005.

2.1.2 Waste Transportation and Off-loading

The following waste transportation and off-loading were conducted:

- Haul barge #1 was tarped and transported off site on September 12. The barge arrived at the Port of Morrow, Oregon; and off-loading was begun on September 14. Off-loading was terminated due to material handling issues related to the characteristics of the load. Off-loading resumed on September 17. Barge #1 off-loading is scheduled to be complete by September 20.
- Haul barge #2 was tarped and transported to the Hickey Marine facility on September 14, 2005. Additional drying agent (Portland cement) was added and incorporated to the load to further stabilize the dredged materials. Barge #2 is scheduled for shipment to Port of Morrow on September 20 and is expected arrive there on September 21.

2.2 Problems Encountered and Proposed Solutions

2.2.1 Waste Material Characteristics at the Off-loading Facility

Haul barge #1 arrived at the Port of Morrow with pockets of free water. Additional Portland cement has been added to haul barge #2 to further solidify the dredged material and reduce the potential for free water at the offloading site. Other alternative drying agent strategies are currently being considered for future loads.

3 MONITORING ACTIVITIES

3.1 Dredge Monitoring – Field Parameter Results

In accordance with Appendix D (i.e., Construction Water Sediment Monitoring Plan [WSMP]) of the RAPP, water quality monitoring for field parameters (turbidity, temperature, dissolved oxygen, pH, and visual monitoring for sheens) occurred during dredging operations at the Site and during offloading operations at the Transfer Facility in the Port of Morrow. During dredging, field parameters were monitored every four hours at one upstream station 300 feet from the inner containment area and three downstream stations 150 feet from the inner containment area. During offloading at the Transfer Facility, field parameters were monitored hourly for the first four hours of offloading and every four hours thereafter at one upstream station 300 feet from the offloading barge and one downstream station 150 feet from the offloading barge. Due to timing constraints, three downstream samples could not be collected during monitoring at the Transfer Facility. At both locations, samples were collected at three depths—one foot below the surface, mid-depth, and one foot above the bottom.

The field parameter results are summarized for the Site and the Transfer Facility in Tables 1 and 2 and compared to the triggers (from Table E-1 of the Removal Action Environmental Protection Plan [RAEPP]). At the Site, no exceedances were identified for dissolved oxygen (DO), temperature, or pH parameters during the monitoring events for this time period. Turbidity exceedances occurred during 4 monitoring events on September 12, 13, and 14, 2005 at the Site. Exceedances occurred at the surface and mid depths at one or two of the downstream stations. These exceedances were similar to those identified last week (September 6 through 9, 2005), which were determined not to be related to the dredging. Therefore, as discussed and agreed upon by EPA, dredging operations continued without modification. During one monitoring event at the Site on September 13, 2005, the flow of the river was reversed due to an extreme flood tide. As a result, the up-current background station was re-located downriver and the down-current compliance stations were re-located upriver.

At the Transfer Facility, no exceedances were identified for any of the field parameters for this time period.

3.2 Dredge Monitoring – Laboratory Parameter Results

In accordance with the WSMP, water quality monitoring for laboratory parameters (PAHs [anthracene, benzo(b)anthracene, benzo(a)pyrene, dibenzofuran, fluoranthene, fluorene, naphthalene, and phenanthrene] and cyanide) also occurred during the dredging operation. Samples for laboratory analyses were collected once a day for the first three days of dredging (September 6 through 9, 2005) at one of the downstream sampling stations at three depths (one foot below the surface, mid-depth, and one foot above the bottom). The laboratory results for these samples were not received until the week of September 12th in accordance with the 3-day turnaround time.

Results of the laboratory parameters and comparisons to the appropriate chronic and acute trigger levels (Table E-1 of the RAEPP) are provided in Table 3. Exceedances of acute and chronic criteria for various PAHs were detected. Immediately following receipt of the results and identification of the exceedances, SES was notified to temporarily stop dredging so that EPA could be consulted to discuss the appropriate path forward. Discussions with EPA determined the following additional best management practices (BMPs) should be implemented prior to recommencing dredging:

- Installation of a system to treat water from the transfer barge prior to discharge into the inner containment area. The treatment system passes the water through an oil-water separator, a 6-vessel bag filter, and a carbon vessel. Water samples will be collected once a day before and after the water passes through the treatment system to determine the efficacy of the treatment system.
- Dredging cycle times have been adjusted. The dredge bucket will now be lowered into the water column and on to the bottom at a slower rate. Once the bucket has been pulled out of the water, the drain time will be reduced minimizing the amount of water that is returned to the dredge area untreated.

At the request of EPA, additional background water quality samples were collected at three upstream stations and five downstream stations and were submitted to the laboratory for chemical testing. Results of this testing have not been received from the laboratory at the writing of this report on September 20, 2005. In addition, as dredging resumes, water chemistry sampling will occur at one downstream and one upstream station to determine the effectiveness of the additional BMPs.

3.3 Dredge Monitoring – Silt Curtain-Mudline Interface

In addition to the collection of water samples for field and laboratory parameters, water samples were collected at the inner containment silt curtain-mudline interface on September 12 and 13, 2005 to monitor the effectiveness of the curtain at the mudline interface. One water sample was collected downstream from just outside of the primary curtain. Sample descriptions on both days indicated clear and colorless water with some particulate matter suspended in the water. Neither sample contained evidence of any tar.

3.4 Fish Casualties within the Inner Containment

On September 13, the dredge operator reported a deceased fish on the shoreline above the water line within the inner containment area. The fish was collected and identified as a Coho salmon, a species identified as potential listed ESU. The incident was reported to NOAA fisheries, and preserved by freezing as directed by the NOAA agent. Three additional distressed fish were noted within the inner containment on September 14 including one crappie, one bluegill, and one sunfish. Attempts to revive the fish failed. Again the fish were reported to NOAA fisheries, and the fish were preserved by freezing.

NOAA recommended that a sonar fish survey be conducted within the inner containment area. Staff from Anchor conducted the survey using a portable sonar unit. The survey yielded no indications that fish were present within the silt curtain enclosure. The BO permits the take of 5 adult species from within the listed ESUs. Since this was the first identified casualty to an adult species within a listed ESU, work was allowed to resume.

4 PROPOSED WORK FOR WEEK OF SEPTEMBER 19, 2005

The following activities are proposed for the week beginning September 19, 2005:

- Complete off-loading of haul barge #1.
- Transport haul barge #2 to Port of Morrow and begin off-loading.
- Dredge and complete the loading of haul barge #3 with material at the site.
- Collect additional sample of dredge material for bench scale testing of drying agents.
- Transport haul barge #3 to Port of Morrow for off-loading.

TABLES

Table 1.
Water Quality Monitoring Results Compared to Triggers - Gasco Site
September 6 through 9, 2005

Station ID	Date	Time	Latitude (dd) ¹	Longitude (dd) ¹	Depth (ft)	DO (mg/L)	DO Triggers ²		Temp (deg C)	Temperature Triggers ²		Turbidity (NTU)	Turbidity Triggers ²		pH	pH Triggers ²	
							Event Specific Background	Pre-construction Background		Event Specific Background	Pre-construction Background		Event Specific Background	Pre-construction Background		Event Specific Background	Pre-construction Background
RAA-WCU ³	9/12/2005	1040	45.57954	122.75578	1	8.22	NA	NA	19.81	NA	NA	10	NA	NA	7.29	NA	NA
RAA-WCU	9/12/2005	1040	45.57954	122.75578	10	8.17	NA	NA	19.82	NA	NA	12	NA	NA	7.28	NA	NA
RAA-WCU	9/12/2005	1040	45.57954	122.75578	25	8.15	NA	NA	19.84	NA	NA	12	NA	NA	7.28	NA	NA
RAA-WCD1	9/12/2005	1120	45.58060	122.75912	1	8.29	<6.5	<6.5	19.99	20.11	22.59	8	13	11.29	7.28	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD1	9/12/2005	1120	45.58060	122.75912	15.5	8.22	<6.5	<6.5	19.89	20.12	22.32	9	15	12.63	7.28	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD1	9/12/2005	1120	45.58060	122.75912	30	8.12	<6.5	<6.5	19.86	20.14	21.84	9	15	18.56	7.27	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD2	9/12/2005	1105	45.58085	122.75897	1	8.30	<6.5	<6.5	20.00	20.11	22.59	8	13	11.29	7.29	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD2	9/12/2005	1105	45.58085	122.75897	21	8.23	<6.5	<6.5	19.87	20.12	22.32	10	15	12.63	7.28	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD2	9/12/2005	1105	45.58085	122.75897	42	8.04	<6.5	<6.5	19.85	20.14	21.84	13	15	18.56	7.24	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD3	9/12/2005	1055	45.58096	122.75883	1	8.31	<6.5	<6.5	19.87	20.11	22.59	9	13	11.29	7.28	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD3	9/12/2005	1055	45.58096	122.75883	22	8.20	<6.5	<6.5	19.85	20.12	22.32	11	15	12.63	7.26	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD3	9/12/2005	1055	45.58096	122.75883	43	8.13	<6.5	<6.5	19.86	20.14	21.84	11	15	18.56	7.28	<6.5 or >8.5	<6.5 or >8.5
RAA-WCU	9/12/2005	1430	45.57954	122.75578	1	8.49	NA	NA	21.36	NA	NA	3	NA	NA	7.30	NA	NA
RAA-WCU	9/12/2005	1430	45.57954	122.75578	12.5	8.36	NA	NA	20.01	NA	NA	8	NA	NA	7.23	NA	NA
RAA-WCU	9/12/2005	1430	45.57954	122.75578	30	8.24	NA	NA	19.94	NA	NA	10	NA	NA	7.21	NA	NA
RAA-WCD1	9/12/2005	1500	45.58060	122.75912	1	8.43	<6.5	<6.5	20.18	21.66	22.59	14	6	11.29	7.21	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD1	9/12/2005	1500	45.58060	122.75912	17	8.34	<6.5	<6.5	20.03	20.31	22.32	14	11	12.63	7.21	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD1	9/12/2005	1500	45.58060	122.75912	31	8.30	<6.5	<6.5	20.03	20.24	21.84	14	13	18.56	7.21	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD2	9/12/2005	1510	45.58085	122.75897	1	8.39	<6.5	<6.5	20.07	21.66	22.59	12	6	11.29	7.27	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD2	9/12/2005	1510	45.58085	122.75897	22	8.37	<6.5	<6.5	20.06	20.31	22.32	15	11	12.63	7.19	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD2	9/12/2005	1510	45.58085	122.75897	44	8.32	<6.5	<6.5	20.04	20.24	21.84	17	13	18.56	7.19	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD3	9/12/2005	1445	45.58096	122.75883	1	8.40	<6.5	<6.5	20.04	21.66	22.59	11	6	11.29	7.21	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD3	9/12/2005	1445	45.58096	122.75883	22	8.37	<6.5	<6.5	20.02	20.31	22.32	12	11	12.63	7.19	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD3	9/12/2005	1445	45.58096	122.75883	44	8.26	<6.5	<6.5	20.01	20.24	21.84	14	13	18.56	7.19	<6.5 or >8.5	<6.5 or >8.5
RAA-WCU	9/12/2005	1705	45.57954	122.75578	1	9.48	NA	NA	21.87	NA	NA	4	NA	NA	7.49	NA	NA
RAA-WCU	9/12/2005	1705	45.57954	122.75578	16	8.10	NA	NA	19.90	NA	NA	12	NA	NA	7.26	NA	NA
RAA-WCU	9/12/2005	1705	45.57954	122.75578	32	7.92	NA	NA	19.83	NA	NA	16	NA	NA	7.19	NA	NA
RAA-WCD1	9/12/2005	1740	45.58060	122.75912	1	8.60	<6.5	<6.5	20.24	22.17	22.59	9	7	11.29	7.30	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD1	9/12/2005	1740	45.58060	122.75912	16	8.49	<6.5	<6.5	20.13	20.20	22.32	11	15	12.63	7.26	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD1	9/12/2005	1740	45.58060	122.75912	30	8.46	<6.5	<6.5	20.12	20.13	21.84	12	19	18.56	7.26	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD2	9/12/2005	1735	45.58085	122.75897	1	8.61	<6.5	<6.5	20.15	22.17	22.59	10	7	11.29	7.30	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD2	9/12/2005	1735	45.58085	122.75897	22	8.48	<6.5	<6.5	20.11	20.20	22.32	11	15	12.63	7.25	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD2	9/12/2005	1735	45.58085	122.75897	42	8.44	<6.5	<6.5	20.13	20.13	21.84	12	19	18.56	7.24	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD3	9/12/2005	1725	45.58096	122.75883	1	8.57	<6.5	<6.5	20.12	22.17	22.59	10	7	11.29	7.26	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD3	9/12/2005	1725	45.58096	122.75883	22	8.49	<6.5	<6.5	20.07	20.20	22.32	11	15	12.63	7.24	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD3	9/12/2005	1725	45.58096	122.75883	44	8.38	<6.5	<6.5	20.10	20.13	21.84	11	19	18.56	7.24	<6.5 or >8.5	<6.5 or >8.5
RAA-WCU ⁴	9/13/2005	1340	45.58091	122.75964	1	8.77	NA	NA	20.24	NA	NA	6	NA	NA	7.30	NA	NA
RAA-WCU	9/13/2005	1340	45.58091	122.75964	22	8.39	NA	NA	19.80	NA	NA	8	NA	NA	7.23	NA	NA
RAA-WCU	9/13/2005	1340	45.58091	122.75964	44	8.24	NA	NA	19.52	NA	NA	10	NA	NA	7.20	NA	NA
RAA-WCD1	9/13/2005	1350	45.57937	122.75626	1	8.88	<6.5	<6.5	20.02	20.54	22.59	9	9	11.29	7.31	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD1	9/13/2005	1350	45.57937	122.75626	6	8.65	<6.5	<6.5	19.66	20.10	22.32	12	11	12.63	7.23	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD1	9/13/2005	1350	45.57937	122.75626	11	8.67	<6.5	<6.5	19.66	19.82	21.84	13	13	18.56	7.21	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD2	9/13/2005	1405	45.57959	122.75603	1	8.67	<6.5	<6.5	19.69	20.54	22.59	12	9	11.29	7.27	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD2	9/13/2005	1405	45.57959	122.75603	20.5	8.58	<6.5	<6.5	19.69	20.10	22.32	12	11	12.63	7.21	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD2	9/13/2005	1405	45.57959	122.75603	40	8.50	<6.5	<6.5	19.67	19.82	21.84	12	13	18.56	7.21	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD3	9/13/2005	1411	45.57986	122.75613	1	8.76	<6.5	<6.5	19.73	20.54	22.59	12	9	11.29	7.32	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD3	9/13/2005	1411	45.57986	122.75613	21	8.61	<6.5	<6.5	19.71	20.10	22.32	11	11	12.63	7.21	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD3	9/13/2005	1411	45.57986	122.75613	41	8.55	<6.5	<6.5	19.75	19.82	21.84	13	13	18.56	7.20	<6.5 or >8.5	<6.5 or >8.5
RAA-WCU	9/13/2005	1655	45.57954	122.75578	1	9.40	NA	NA	20.35	NA	NA	6	NA	NA	7.40	NA	NA
RAA-WCU	9/13/2005	1655	45.57954	122.75578	18	8.72	NA	NA	19.73	NA	NA	8	NA	NA	7.21	NA	NA
RAA-WCU	9/13/2005	1655	45.57954	122.75578	36	8.45	NA	NA	19.62	NA	NA	13	NA	NA	7.16	NA	NA
RAA-WCD1	9/13/2005	1725	45.58060	122.75912	1	8.77	<6.5	<6.5	19.97	20.65	22.59	13	9	11.29	7.29	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD1	9/13/2005	1725	45.58060	122.75912	16	8.57	<6.5	<6.5	19.82	20.03	22.32	15	11	12.63	7.15	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD1	9/13/2005	1725	45.58060	122.75912	31	8.56	<6.5	<6.5	19.80	19.92	21.84	16	16	18.56	7.16	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD2	9/13/2005	1710	45.58085	122.75897	1	8.84	<6.5	<6.5	19.80	20.65	22.59	9	9	11.29	7.22	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD2	9/13/2005	1710	45.58085	122.75897	22	8.70	<6.5	<6.5	19.78	20.03	22.32	11	11	12.63	7.16	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD2	9/13/2005	1710	45.58085	122.75897	43	8.64	<6.5	<6.5	19.78	19.92	21.84	13	16	18.56	7.17	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD3	9/13/2005	1715	45.58096	122.75883	1	8.88	<6.5	<6.5	19.79	20.65	22.59	9	9	11.29	7.37	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD3	9/13/2005	1715	45.58096	122.75883	23	8.74	<6.5	<6.5	19.76	20.03	22.32	9	11	12.63	7.21	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD3	9/13/2005	1715	45.58096	122.75883	45	8.68	<6.5	<6.5	19.77	19.92	21.84	9	16	18.56	7.19	<6.5 or >8.5	<6.5 or >8.5
RAA-WCU	9/14/2005	910	45.57954	122.75578	1	8.73	NA	NA	19.30	NA	NA	7	NA	NA	7.31	NA	NA
RAA-WCU	9/14/2005	910	45.57954	122.75578	13	8.63	NA	NA	19.30	NA	NA	7	NA	NA	7.31	NA	NA
RAA-WCU	9/14/2005	910	45.57954	122.75578	27	8.43	NA	NA	19.22	NA	NA	11	NA	NA	7.26	NA	NA
RAA-WCD1	9/14/2005	920	45.58060	122.75912	1	8.68	<6.5	<6.5	19.17	19.60	22.59	9	10	11.29	7.25	<6.5 or >8.5	<6.5 or >8.5
RAA-WCD1	9/14/2005	920	45.58060	122.75912	22	8.61	<6.5	<6.5	19.19	19.60	22.32	9					

Table 2.
Water Quality Monitoring Results Compared to Triggers - Transfer Facility
September 14 and 17, 2005

Station ID	Date	Time	Depth (ft)	DO (mg/L)	DO Triggers ²		Temp (deg C)	Temperature Triggers ²		Turbidity (NTU)	Turbidity Triggers ²		pH	pH Triggers ²	
					Event Specific Background	Pre-construction Background		Event Specific Background	Pre-construction Background		Event Specific Background	Pre-construction Background		Event Specific Background	Pre-construction Background
TF-WCU	9/14/2005	1045	1	8.80	NA	NA	19.67	NA	NA	1.74	NA	NA	7.96	NA	NA
TF-WCU	9/14/2005	1045	8	8.98	NA	NA	19.51	NA	NA	2.41	NA	NA	8.03	NA	NA
TF-WCU	9/14/2005	1045	14.5	9.03	NA	NA	19.43	NA	NA	2.67	NA	NA	8.06	NA	NA
TF-WCD1	9/14/2005	1015	1	8.56	<6.5	<6.5	19.61	19.97	21.78	2.43	4.74	6.33	7.89	<6.5 or >8.5	<6.5 or >8.5
TF-WCD1	9/14/2005	1015	7.5	8.80	<6.5	<6.5	19.56	19.81	21.48	2.14	5.41	6.58	7.99	<6.5 or >8.5	<6.5 or >8.5
TF-WCD1	9/14/2005	1015	14	8.26	<6.5	<6.5	19.58	19.73	21.42	2.31	5.67	6.64	8	<6.5 or >8.5	<6.5 or >8.5
TF-WCU	9/17/2005	912	1	8.91	NA	NA	18.53	NA	NA	2.28	NA	NA	7.92	NA	NA
TF-WCU	9/17/2005	912	6.5	8.85	NA	NA	18.53	NA	NA	1.99	NA	NA	7.98	NA	NA
TF-WCU	9/17/2005	912	12	8.87	NA	NA	18.54	NA	NA	2.13	NA	NA	7.99	NA	NA
TF-WCD1	9/17/2005	830	1	8.91	<6.5	<6.5	18.57	18.83	21.78	1.77	5.28	6.33	7.93	<6.5 or >8.5	<6.5 or >8.5
TF-WCD1	9/17/2005	830	11.5	8.83	<6.5	<6.5	18.55	18.83	21.48	2.63	4.99	6.58	8.02	<6.5 or >8.5	<6.5 or >8.5
TF-WCD1	9/17/2005	830	20.5	8.82	<6.5	<6.5	18.55	18.84	21.42	2.24	5.13	6.64	8.01	<6.5 or >8.5	<6.5 or >8.5
TF-WCU	9/17/2005	1300	1	9.18	NA	NA	18.81	NA	NA	2.04	NA	NA	7.98	NA	NA
TF-WCU	9/17/2005	1300	7	9.07	NA	NA	18.77	NA	NA	1.93	NA	NA	8.04	NA	NA
TF-WCU	9/17/2005	1300	13	9.06	NA	NA	18.76	NA	NA	1.86	NA	NA	8.04	NA	NA
TF-WCD1	9/17/2005	1245	1	8.88	<6.5	<6.5	18.93	19.11	21.78	1.72	5.04	6.33	7.98	<6.5 or >8.5	<6.5 or >8.5
TF-WCD1	9/17/2005	1245	7.5	9.04	<6.5	<6.5	18.92	19.07	21.48	1.79	4.93	6.58	8.03	<6.5 or >8.5	<6.5 or >8.5
TF-WCD1	9/17/2005	1245	14.5	9.09	<6.5	<6.5	18.92	19.06	21.42	1.69	4.86	6.64	8.03	<6.5 or >8.5	<6.5 or >8.5
TF-WCU	9/17/2005	1645	1	9.43	NA	NA	19.36	NA	NA	1.70	NA	NA	8.08	NA	NA
TF-WCU	9/17/2005	1645	6.5	9.32	NA	NA	19.35	NA	NA	1.78	NA	NA	8.13	NA	NA
TF-WCU	9/17/2005	1645	12	9.41	NA	NA	19.30	NA	NA	1.69	NA	NA	8.15	NA	NA
TF-WCD1	9/17/2005	1600	1	9.03	<6.5	<6.5	19.40	19.66	21.78	1.77	4.70	6.33	8.03	<6.5 or >8.5	<6.5 or >8.5
TF-WCD1	9/17/2005	1600	8.5	9.10	<6.5	<6.5	19.39	19.65	21.48	1.80	4.78	6.58	8.08	<6.5 or >8.5	<6.5 or >8.5
TF-WCD1	9/17/2005	1600	16.5	9.07	<6.5	<6.5	19.35	19.60	21.42	2.29	4.69	6.64	8.04	<6.5 or >8.5	<6.5 or >8.5

Notes: ¹Datum for coordinates is NAD 83.

²Trigger is exceeded where downstream conditions exceed the specified amounts relative to both the event-specific background and the pre-construction background survey (95% upper

³TF-WCU is the upstream event-specific background station.

BOLD indicates an exceedance

Table 3.
Final Unvalidated Water Chemistry Results Compared to Triggers--Gasco Site
September 6-9, 2005

Location ID Sample ID Sample Date	WQ Trigger		RAA-WCD1 Surface Depth 9/7/2005	RAA-WCD1 Mid Depth 9/7/2005	RAA-WCD1 Bottom Depth 9/7/2005	RAA-WCD2 Surface Depth 9/8/2005	RAA-WCD2 Mid Depth 9/8/2005	RAA-WCD2 Bottom Depth 9/8/2005	RAA-WCD1 Surface Depth 9/9/2005	RAA-WCD1 Mid Depth 9/9/2005	RAA-WCD1 Bottom Depth 9/9/2005
	Chronic	Acute									
Conventional (mg/L)											
Cyanide	0.0052	0.02	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
SVOCs (µg/L)											
Anthracene	0.73	13	2.06 *	2.64 *	3.76 *	0.73	1.63 *	5.53 *	0.59	0.33	0.51
Benzo(a)anthracene	0.02	0.49	1.42 * #	2.05 * #	2.65 * #	0.59 * #	1.29 * #	5.86 * #	0.38 *	0.26 *	0.41 *
Benzo(a)pyrene	0.01	0.24	2.01 * #	2.24 * #	2.89 * #	0.78 * #	1.79 * #	6.58 * #	1.15 * #	0.85 * #	1.00 * #
Dibenzofuran	3.7	66	0.26	0.38 J	0.47	1.98 U	1.94 U	20.30 U	2.00 U	0.04 J	2.00 U
Fluoranthene	6.16	3980	5.54	7.65 *	9.17 *	2.42	4.93	19.00 *	1.65	1.28	1.57
Fluorene	3.9	70	1.85	2.31	2.78	0.43	1.08	3.43	0.42	0.23	0.28
Naphthalene	12	190	22.70 *	35.40 *	45.80 *	4.41	10.80	31.50 *	0.50 U	0.12	0.50 U
Phenanthrene			10.40	14.60	17.90	3.35	8.46	29.50	1.40	0.79	1.24

Notes: * = Exceeds chronic criteria
= Exceeds acute criteria
J = Estimated value
U = Not detected

APPENDIX A
GASCO SITE WQ MONITORING LOG SHEETS



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Water Quality Monitoring Form			
Station ID: RAA-NCU- A -050912		Date: 9/12/05	Time: 1040
Project Name: GASCO		Project Number:	
Coordinates Datum:			
Lat/Northing:	Same	Long/Easting:	Same
Weather/River Stage/Flow Observations: low tide falling tide (circled)			
Status/Description of Operation at Time of Sampling: Dredging of clamshell → very slow cycles → Dredging stopped throughout sampling event			
Depth to Bottom: 20 (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: 1 (m)	2.22	19.81	10
Depth 2: 10 (m)	8.17	19.32	12
Depth 3: 20 25 (m)	8.15	19.54	12
Other:			
Evidence of floating or suspended materials:		No floating materials	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		No sheen	
Discoloration and Turbidity:		Brownish Green color	
Velocity at stated depth: 2.8' 0.15 f/s			
Color:	see above		
Odor:	none detected		
Other Observations:			
Comments: pH: 1 <u>7.29</u> 2 <u>7.33</u> 3 <u>7.33</u> COND: 1 <u>88</u> 2 <u>91</u> 3 <u>88</u> Dredging weather than - stopped 10 minutes ago			
Recorded by: BH	Other Monitoring Personnel: EA/BH		



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Water Quality Monitoring Form			
Station ID: <u>DAA-WCD1 # 050912</u>		Date: <u>9/12/05</u>	Time: <u>11:20</u>
Project Name: <u>GASCO</u>		Project Number:	
Coordinates Datum:			
Lat/Northing:	<u>same</u>	Long/Easting:	<u>same</u>
Weather/River Stage/Flow Observations: <u>low tide - just beginning to flood</u>			
Status/Description of Operation at Time of Sampling: <u>Dredging w/ clamshell and stopped but resumed at 1105</u>			
Depth to Bottom: <u>31</u> (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1</u> (m)	<u>8.29</u>	<u>19.99</u>	<u>8</u>
Depth 2: <u>15.5</u> (m)	<u>8.27</u>	<u>19.89</u>	<u>9</u>
Depth 3: <u>30</u> (m)	<u>8.12</u>	<u>19.86</u>	<u>9</u>
Other:			
Evidence of floating or suspended materials:		<u>Ø</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>Ø</u>	
Discoloration and Turbidity:		<u>Greenish brown</u>	
Velocity at stated depth:			
Color:	<u>Greenish brown</u>		
Odor:	<u>none detected</u>		
Other Observations:			
Comments:			
pH: 1 <u>7.38</u> 2 <u>7.88</u> 3 <u>7.27</u>			
COND: 1 <u>59</u> 2 <u>88</u> 3 <u>89</u>			
Recorded by: <u>BH</u>		Other Monitoring Personnel: <u>EA/BH</u>	



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Water Quality Monitoring Form			
Station ID: RAA-WCD2 ^A / _B 060912		Date: 9/12/05	Time: 1105 - 1110
Project Name: GASLO		Project Number:	
Coordinates Datum:			
Lat/Northing:	same	Long/Easting:	same
Weather/River Stage/Flow Observations: Flooding tide (just beginning)			
Status/Description of Operation at Time of Sampling: Dredging just resumed 1105			
Depth to Bottom: 42 (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: 1 (m)	8.30	20.00	9
Depth 2: 21 (m)	8.23	19.87	10
Depth 3: 42 (m)	8.04	19.85	13
Other:			
Evidence of floating or suspended materials:		0	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		0	
Discoloration and Turbidity:		0	
Velocity at stated depth:			
Color:	greenish brown		
Odor:	None detected		
Other Observations:			
Comments:			
pH:	1 <u>7.29</u>	2 <u>7.38</u>	3 <u>7.24</u>
Cond:	1 <u>88</u>	2 <u>89</u>	3 <u>89</u>
Recorded by: BH		Other Monitoring Personnel: EA/BH	



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Water Quality Monitoring Form			
Station ID: RAA-WCD3 A 050912		Date: 9/2/05	Time: 1055-1105
Project Name: GASLO		Project Number:	
Coordinates Datum:			
Lat/Northing:	same	Long/Easting:	same
Weather/River Stage/Flow Observations: Low tide plus 2.5 by stage 91 4 just beginning to flood			
Status/Description of Operation at Time of Sampling: Possible w/ cable 6m occurred from 9:25-10:25; not currently discharging			
Depth to Bottom: 44 (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: 1 (m)	8.31	19.87	9
Depth 2: 22 (m)	8.20	19.55	11
Depth 3: 43 (m)	8.13	19.56	11
Other:			
Evidence of floating or suspended materials:		<input checked="" type="checkbox"/>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<input checked="" type="checkbox"/>	
Discoloration and Turbidity:		<input checked="" type="checkbox"/>	
Velocity at stated depth:			
Color:	greenish brown		
Odor:	None detected		
Other Observations:			
Comments: pH: 1 <u>7.28</u> 2 <u>7.24</u> 3 <u>7.28</u> COND: 1 <u>89</u> 2 <u>88</u> 3 <u>88</u>			
Recorded by: BM		Other Monitoring Personnel: GA/BH	



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Water Quality Monitoring Form			
Station ID: <u>PAA.WCV.2 050912</u>		Date: <u>9/12/05</u>	Time: <u>1430</u>
Project Name: <u>GASCO</u>		Project Number:	
Coordinates Datum:			
Lat/Northing:	<u>Same</u>	Long/Easting:	<u>Same</u>
Weather/River Stage/Flow Observations: <u>High tide</u>			
Status/Description of Operation at Time of Sampling: <u>Dredging</u>			
Depth to Bottom: <u>25</u> (m) ^{ft}			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1</u> (m) ^{ft}	<u>8.49</u>	<u>21.36</u>	<u>3</u>
Depth 2: <u>12.5</u> (m)	<u>8.36</u>	<u>20.01</u>	<u>8</u>
Depth 3: <u>20</u> (m)	<u>8.24</u>	<u>19.94</u>	<u>10</u>
Other:			
Evidence of floating or suspended materials:		<u>0</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>0</u>	
Discoloration and Turbidity:		<u>0</u>	
Velocity at stated depth:		.	
Color:	<u>Greenish brown</u>		
Odor:	<u>None detected</u>		
Other Observations:			
Comments: pH: 1 <u>7.30</u> 2 <u>7.27</u> 3 <u>7.21</u> COND: 1 <u>88</u> 2 <u>89</u> 3 <u>89</u>			
Recorded by: <u>BM</u>		Other Monitoring Personnel: <u>BL/SA</u>	



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Water Quality Monitoring Form			
Station ID: <u>CAA-WL511050912</u>		Date: <u>9/12/05</u>	Time: <u>1500</u>
Project Name: <u>GABLO</u>		Project Number:	
Coordinates Datum:			
Lat/Northing:	<u>same</u>	Long/Easting:	<u>same</u>
Weather/River Stage/Flow Observations: <u>High tide</u>			
Status/Description of Operation at Time of Sampling: <u>Dredging</u>			
Depth to Bottom: <u>36</u> (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1</u> (m)	<u>8.43</u>	<u>20.18</u>	<u>14</u>
Depth 2: <u>17</u> (m)	<u>8.31</u>	<u>20.03</u>	<u>14</u>
Depth 3: <u>31</u> (m)	<u>8.30</u>	<u>20.03</u>	<u>14</u>
Other:			
Evidence of floating or suspended materials:		<u>0</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>0</u>	
Discoloration and Turbidity:		<u>0</u>	
Velocity at stated depth:			
Color:	<u>greenish brown</u>		
Odor:	<u>None detected</u>		
Other Observations:			
Comments: pH: 1 <u>7.21</u> 2 <u>7.21</u> 3 <u>7.21</u> Cond: 1 <u>90</u> 2 <u>90</u> 3 <u>90</u>			
Recorded by: <u>BM</u>		Other Monitoring Personnel: <u>BM/JSR</u>	



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Water Quality Monitoring Form			
Station ID: <u>76480</u>		Date: <u>9/12/05</u>	Time: <u>1510</u>
Project Name: <u>BOA-WCTD-050912</u>		Project Number:	
Coordinates Datum:			
Lat/Northing:	<u>same</u>	Long/Easting:	<u>same</u>
Weather/River Stage/Flow Observations: <u>High tide</u>			
Status/Description of Operation at Time of Sampling: <u>Drudging</u>			
Depth to Bottom: <u>45</u> (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1</u> (m)	<u>8.39</u>	<u>20.07</u>	<u>12</u>
Depth 2: <u>25</u> (m)	<u>8.37</u>	<u>20.06</u>	<u>15</u>
Depth 3: <u>44</u> (m)	<u>8.32</u>	<u>20.04</u>	<u>17</u>
Other:			
Evidence of floating or suspended materials:		<u>0</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>0</u>	
Discoloration and Turbidity:		<u>0</u>	
Velocity at stated depth:			
Color:	<u>Greenish brown</u>		
Odor:	<u>None detected</u>		
Other Observations:			
Comments:			
pH: 1 <u>7.27</u> 2 <u>7.19</u> 3 <u>7.19</u>			
Cond: 1 <u>90</u> 2 <u>90</u> 3 <u>90</u>			
Recorded by: <u>BH</u>		Other Monitoring Personnel: <u>BH / SA</u>	



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Water Quality Monitoring Form			
Station ID: <u>8AA-W03-050912</u>	Date: <u>9/12/05</u>	Time: <u>1445</u>	
Project Name: <u>GASCO</u>		Project Number:	
Coordinates Datum:			
Lat/Northing: <u>same</u>	Long/Easting: <u>same</u>		
Weather/River Stage/Flow Observations: <u>High tide</u>			
Status/Description of Operation at Time of Sampling: <u>Dredging</u>			
Depth to Bottom: <u>45</u> (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1</u> (m)	<u>8.40</u>	<u>20.04</u>	<u>11</u>
Depth 2: <u>32</u> (m)	<u>8.37</u>	<u>20.02</u>	<u>12</u>
Depth 3: <u>44</u> (m)	<u>8.26</u>	<u>20.01</u>	<u>14</u>
Other:			
Evidence of floating or suspended materials:		<u>0</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>0</u>	
Discoloration and Turbidity:		<u>0</u>	
Velocity at stated depth:			
Color:	<u>Greenish brown</u>		
Odor:	<u>None detected</u>		
Other Observations:			
Comments:			
pH: 1 <u>7.21</u> 2 <u>7.19</u> 3 <u>7.19</u>			
Cond. 1 <u>90</u> 3 <u>90</u> 4 <u>90</u>			
Recorded by: <u>BH</u>		Other Monitoring Personnel: <u>BH SA</u>	



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Water Quality Monitoring Form			
Station ID: <u>RAA-WCU 050912</u>		Date: <u>9/12/05</u>	Time: <u>1705</u>
Project Name: <u>Gasco</u>		Project Number:	
Coordinates Datum:			
Lat/Northing:	<u>301 M A</u>	Long/Easting:	<u>same</u>
Weather/River Stage/Flow Observations: <u>Falling/ebbing tide</u>			
Status/Description of Operation at Time of Sampling: <u>Dredging Operations</u>			
Depth to Bottom: <u>33</u> (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1</u> (m)	<u>9.48/9.53</u>	<u>21.27/21.87</u>	<u>4</u>
Depth 2: <u>16</u> (m)	<u>8.10</u>	<u>19.90</u>	<u>12</u>
Depth 3: <u>32</u> (m)	<u>7.92</u>	<u>19.83</u>	<u>16</u>
Other:			
Evidence of floating or suspended materials:		<u>0</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>0</u>	
Discoloration and Turbidity:		<u>0</u>	
Velocity at stated depth:			
Color:	<u>Greenish brown</u>		
Odor:	<u>None detected</u>		
Other Observations:			
Comments:			
pH: 1 <u>7.49</u> 2 <u>7.26</u> 3 <u>7.19</u>			
Cond: 1 <u>92</u> 2 <u>89</u> 3 <u>90</u>			
Recorded by: <u>BML</u>		Other Monitoring Personnel: <u>JR</u>	



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Water Quality Monitoring Form			
Station ID: <u>RAAWCD1 050912</u>		Date: <u>9/12/05</u>	Time: <u>1740</u>
Project Name: <u>GASLO</u>		Project Number:	
Coordinates Datum:			
Lat/Northing:	<u>SAME</u>	Long/Easting:	<u>SAME</u>
Weather/River Stage/Flow Observations: <u>Fallingebb of tide</u>			
Status/Description of Operation at Time of Sampling: <u>Dredging ongoing</u>			
Depth to Bottom: <u>31</u> (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1</u> (m)	<u>8.60</u>	<u>20.24</u>	<u>9</u>
Depth 2: <u>16</u> (m)	<u>8.49</u>	<u>20.13</u>	<u>11</u>
Depth 3: <u>30</u> (m)	<u>8.40</u>	<u>20.12</u>	<u>12</u>
Other:			
Evidence of floating or suspended materials:		<u>0</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>0</u>	
Discoloration and Turbidity:		<u>0</u>	
Velocity at stated depth:			
Color:	<u>Greenish brown</u>		
Odor:	<u>0</u>		
Other Observations:			
Comments:			
pH: 1 <u>7.30</u> 2 <u>7.26</u> 3 <u>7.26</u>			
Cond: 1 <u>89</u> 2 <u>89</u> 3 <u>90</u>			
Recorded by: <u>SMH</u>		Other Monitoring Personnel: <u>JR</u>	



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Water Quality Monitoring Form			
Station ID: RAA.WC02 050912		Date: 9/12/05	Time: 1735
Project Name: BASCO		Project Number:	
Coordinates Datum:			
Lat/Northing: same	Long/Easting: same		
Weather/River Stage/Flow Observations: Falling/ebbing tide			
Status/Description of Operation at Time of Sampling: Dredging ongoing			
Depth to Bottom: 44 (m)'			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: 1 (m)'	8.61	20.15	10
Depth 2: 22 (m)'	8.48	20.11	11
Depth 3: 42 (m)'	8.44	20.3	12
Other:			
Evidence of floating or suspended materials:		Ø	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		Ø	
Discoloration and Turbidity:		Ø	
Velocity at stated depth:			
Color:	Greenish brown		
Odor:	None detected		
Other Observations:			
Comments:			
pH: 1 <u>7.30</u> 2 <u>7.25</u> 3 <u>7.24</u>			
Cond: 1 <u>90</u> 2 <u>90</u> 3 <u>90</u>			
Recorded by: BMH		Other Monitoring Personnel: JC	



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Water Quality Monitoring Form			
Station ID: <u>RAA-WCD 050912</u>		Date: <u>9/12/05</u>	Time: <u>1:05</u>
Project Name: <u>GASCO</u>		Project Number:	
Coordinates Datum:			
Lat/Northing:	<u>same</u>	Long/Easting:	<u>same</u>
Weather/River Stage/Flow Observations: <u>Falling lapping tide</u>			
Status/Description of Operation at Time of Sampling: <u>Dredging</u>			
Depth to Bottom: <u>45</u> (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1</u> (m)	<u>8.57</u>	<u>20.12</u>	<u>10</u>
Depth 2: <u>22</u> (m)	<u>8.49</u>	<u>20.07</u>	<u>11</u>
Depth 3: <u>41</u> (m)	<u>8.38</u>	<u>20.10</u>	<u>11</u>
Other:			
Evidence of floating or suspended materials:		<input checked="" type="checkbox"/>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<input type="checkbox"/>	
Discoloration and Turbidity:		<input checked="" type="checkbox"/>	
Velocity at stated depth:			
Color:	<u>Greenish brown</u>		
Odor:	<u>None detected</u>		
Other Observations:			
Comments: pH: 1 <u>7.26</u> 2 <u>7.24</u> 3 <u>7.24</u> Cond: 1 <u>89</u> 2 <u>90</u> 3 <u>90</u>			
Recorded by: <u>Bmt</u>		Other Monitoring Personnel: <u>JR</u>	



Flow Reversed

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Water Quality Monitoring Form			
Station ID: <u>CAA(WCUB)050913</u>		Date: <u>9/13/05</u>	Time: <u>13:40</u>
Project Name: <u>GASCO</u>		Project Number:	
Coordinates Datum: <u>NAD83</u>			
Lat/Northing:	<u>45.58091°</u>	Long/Easting:	<u>122,75964°</u>
Weather/River Stage/Flow Observations: <u>Flow reversed Sampling performed 300ft</u> <u>rising tide</u> <u>Downstream</u>			
Status/Description of Operation at Time of Sampling: <u>Dredging ongoing + Dive Bottom</u> <u>Area</u> <u>→ clamshell</u>			
Depth to Bottom: <u>45</u> (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1</u> (m)	<u>8.77</u>	<u>20.24</u>	<u>6/5 Second Contaminatory</u> <u>Reading at</u>
Depth 2: <u>22</u> (m)	<u>8.39</u>	<u>19.80</u>	<u>8</u> <u>1435</u>
Depth 3: <u>44</u> (m)	<u>8.24</u>	<u>19.52</u>	<u>10</u>
Other:			
Evidence of floating or suspended materials:		<u>Ø</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>Ø</u>	
Discoloration and Turbidity:		<u>Ø</u>	
Velocity at stated depth:		<u>3' 0.62^{ft} upstream</u>	
Color:	<u>Light Brown</u>		
Odor:	<u>Ø</u>		
Other Observations:		<u>Sunny, light wind.</u>	
Comments:			
pH:	<u>1 7.30</u>	<u>2 7.27</u>	<u>3 7.20</u>
Cond:	<u>1 98</u>	<u>2 99</u>	<u>3 99</u>
Recorded by: <u>BmH</u>		Other Monitoring Personnel: <u>EA</u>	

Flow Reversed



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Water Quality Monitoring Form			
Station ID: <u>RAA (WCD 3) 050913</u>		Date: <u>9/13/05</u>	Time: <u>1350</u>
Project Name: <u>CASCO</u>		Project Number:	
Coordinates Datum: <u>NAD83</u>			
Lat/Northing:	<u>45.57937°</u>	Long/Easting:	<u>122.75626°</u>
Weather/River Stage/Flow Observations: <u>Flow reversed. Sampling performed</u> <u>rising tide upstream location</u>			
Status/Description of Operation at Time of Sampling: <u>Dredging ongoing w/ clamshell</u>			
Depth to Bottom: <u>12 (m)</u>			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1 (m)</u>	<u>8.89</u>	<u>20.02</u>	<u>9 ^{1/5} BM4</u>
Depth 2: <u>6 (m)</u>	<u>8.65</u>	<u>19.66</u>	<u>12</u>
Depth 3: <u>11 (m)</u>	<u>9.67</u>	<u>19.66</u>	<u>13</u>
Other:			
Evidence of floating or suspended materials:		<u>Foamy white (small scum)</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>Ø</u>	
Discoloration and Turbidity:		<u>Similar to WCD</u>	
Velocity at stated depth: <u>1.5' 0.13 upstr</u>		<u>light brown ^{BM4 minimal turbid} slack tide?</u>	
Color:	<u>light brown</u>		
Odor:	<u>Strong odor of petroleum</u>		
Other Observations:	<u>Tied to pilings at nearest shore location</u>		
Comments:			
pH: 1 <u>7.31</u> 2 <u>7.23</u> 3 <u>7.21</u>			
Cond: 1 <u>99</u> 2 <u>98</u> 3 <u>98</u>			
Recorded by: <u>BM4</u>		Other Monitoring Personnel: <u>EA</u>	



Flow gauge

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Water Quality Monitoring Form			
Station ID: <u>RAAW02-3 050913</u>		Date: <u>9/13/05</u>	Time: <u>1405</u>
Project Name: <u>GASCO</u>		Project Number:	
Coordinates Datum: <u>NAD 83</u>			
Lat/Northing:	<u>48.57959°</u>	Long/Easting:	<u>122.75603°</u>
Weather/River Stage/Flow Observations: <u>Incoming tide</u>			
Status/Description of Operation at Time of Sampling: <u>Dredging on point channel</u>			
Depth to Bottom: <u>41</u> (m) #			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1</u> (m) #	<u>8.67</u>	<u>19.69</u>	<u>12</u>
Depth 2: <u>20.5</u> (m)	<u>8.58</u>	<u>19.69</u>	<u>12</u>
Depth 3: <u>40</u> (m)	<u>8.50</u>	<u>19.67</u>	<u>12</u>
Other:			
Evidence of floating or suspended materials:		<u>Small white floating gum</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>Ø</u>	
Discoloration and Turbidity:		<u>A little turbid.</u>	
Velocity at stated depth:			
Color:	<u>Brownish green</u>		
Odor:	<u>Petrochem Odor</u>		
Other Observations:	<u>wind is picking up.</u>		
Comments:			
pH:	<u>1 7.27</u>	<u>2 7.21</u>	<u>3 7.21</u>
Cond:	<u>1 99</u>	<u>2 99</u>	<u>3 99</u>
Recorded by: <u>BMH</u>		Other Monitoring Personnel: <u>EA</u>	



Flow Reversed

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Water Quality Monitoring Form			
Station ID: RAA-WCD3# 058913		Date: 9/13/05	Time: 1411
Project Name: GASCO		Project Number:	
Coordinates Datum: NAD83			
Lat/Northing:	45.57996'	Long/Easting:	122.75613'
Weather/River Stage/Flow Observations: Incoming Tide			
Status/Description of Operation at Time of Sampling: Dredging organics w/ clam shell			
Depth to Bottom: 42 (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: 1 (m)	8.76	19.73	12
Depth 2: 21 (m)	8.61	19.71	11
Depth 3: 41 (m)	8.55	19.75	13
Other:			
Evidence of floating or suspended materials:		<input checked="" type="checkbox"/>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<input checked="" type="checkbox"/>	
Discoloration and Turbidity:		Light	
Velocity at stated depth:			
Color:	Brownish Green		
Odor:	Petroleum Odor		
Other Observations:	Slight wind		
Comments:			
pH:	1 7.32	2 7.21	3 7.20
Cond	1 99	2 99	3 99
Recorded by: BMH		Other Monitoring Personnel: EA	



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Water Quality Monitoring Form			
Station ID: <u>KAA-WCV3-050913</u>	Date: <u>9/13/05</u>	Time: <u>1655</u>	
Project Name: <u>GPSCo</u>		Project Number:	
Coordinates Datum:			
Lat/Northing: <u>same</u>	Long/Easting: <u>same</u>		
Weather/River Stage/Flow Observations: <u>Downstream is down river</u> <u>Falling tide</u>			
Status/Description of Operation at Time of Sampling: <u>Dredging in progress w/ clamshells</u>			
Depth to Bottom: <u>36'</u> (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1</u> (m)	<u>9.40</u>	<u>BmH</u> <u>20.46 20.35</u>	<u>6</u>
Depth 2: <u>18</u> (m)	<u>8.72</u>	<u>19.73</u>	<u>8</u>
Depth 3: <u>36</u> (m)	<u>8.45</u>	<u>19.62</u>	<u>13</u>
Other: <u>56</u>			
Evidence of floating or suspended materials:		<u>Some small foam</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>Isolated sheen pocket, contiguous</u>	
Discoloration and Turbidity:		<u>—</u>	
Velocity at stated depth:			
Color:	<u>Light brownish green</u>		
Odor:	<u>Strong petrochemical</u>		
Other Observations:	<u>Large wake for WCV3</u>		
Comments:			
pH: 1 <u>7.40</u> 2 <u>7.21</u> 3 <u>7.16</u>			
Cond: 1 <u>99</u> 2 <u>98</u> 3 <u>98</u>			
Recorded by: <u>BmH</u>		Other Monitoring Personnel: <u>KA</u>	



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Water Quality Monitoring Form			
Station ID: <u>RPA-WCDL § 050913</u>	Date: <u>9/10/05</u>	Time: <u>1715</u> ¹⁷²⁵	
Project Name: <u>GASCO</u>	Project Number:		
Coordinates Datum:			
Lat/Northing: <u>same</u>	Long/Easting: <u>same</u>		
Weather/River Stage/Flow Observations: <u>Falling tide</u>			
Status/Description of Operation at Time of Sampling: <u>Dredging w/ clamshell</u>			
Depth to Bottom: <u>32</u> (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1</u> (m)	<u>8.77</u>	<u>19.97</u>	<u>13</u>
Depth 2: <u>16</u> (m)	<u>8.57</u>	<u>19.82</u>	<u>15</u>
Depth 3: <u>31</u> (m)	<u>8.56</u>	<u>19.80</u>	<u>16</u>
Other:			
Evidence of floating or suspended materials:		<u>surface scum</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>—</u>	
Discoloration and Turbidity:		<u>slight turbidity</u>	
Velocity at stated depth:		<u>—</u>	
Color:	<u>brownish green</u>		
Odor:	<u>strong petrochemical</u>		
Other Observations:	<u>—</u>		
Comments:			
pH: 1 <u>7.29</u> 2 <u>7.15</u> 3 <u>7.16</u>			
Cond: 1 <u>99</u> 2 <u>99</u> 3 <u>99</u>			
Recorded by: <u>BMH</u>		Other Monitoring Personnel: <u>EA</u>	



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Water Quality Monitoring Form			
Station ID: <u>RAA WCD28 05013</u>		Date: <u>9/13/05</u>	Time: <u>1710</u>
Project Name: <u>LoASCO</u>		Project Number:	
Coordinates Datum:			
Lat/Northing:	<u>same</u>	Long/Easting:	<u>same</u>
Weather/River Stage/Flow Observations: <u>Downstream is down river falling tide</u>			
Status/Description of Operation at Time of Sampling: <u>Dredging ongoing w/ it</u>			
Depth to Bottom: <u>441</u> (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1</u> (m)	<u>8.84</u>	<u>19.80</u>	<u>9</u>
Depth 2: <u>22</u> (m)	<u>8.70</u>	<u>19.78</u>	<u>11</u>
Depth 3: <u>43</u> (m)	<u>8.64</u>	<u>19.78</u>	<u>13</u>
Other:			
Evidence of floating or suspended materials:		<u>Ø</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>Ø</u>	
Discoloration and Turbidity:		<u>slight</u>	
Velocity at stated depth:			
Color:	<u>Brownish Green</u>		
Odor:	<u>Ø</u>		
Other Observations:			
Comments:			
pH: 1 <u>7.72</u> 2 <u>7.18</u> 3 <u>7.17</u>			
Cond: 1 <u>98</u> 2 <u>99</u> 3 <u>99</u>			
Recorded by: <u>BMH</u>		Other Monitoring Personnel: <u>EA</u>	



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Water Quality Monitoring Form			
Station ID: <u>RAAWED3⁴ 050913</u>		Date: <u>9/13/05</u>	Time: <u>1715</u>
Project Name: <u>GASCO</u>		Project Number:	
Coordinates Datum:			
Lat/Northing:	<u>SAME</u>	Long/Easting:	<u>SAME</u>
Weather/River Stage/Flow Observations: <u>Falling tide</u>			
Status/Description of Operation at Time of Sampling: <u>Dredging ongoing w/ clam shell</u>			
Depth to Bottom: <u>46</u> (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1</u> (m)	<u>8.88</u>	<u>19.79</u>	<u>9</u>
Depth 2: <u>23</u> (m)	<u>8.74</u>	<u>19.76</u>	<u>9</u>
Depth 3: <u>45</u> (m)	<u>8.68</u>	<u>19.77</u>	<u>9</u>
Other:			
Evidence of floating or suspended materials:		<u>- Floating bottle.</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>Ø</u>	
Discoloration and Turbidity:		<u>- slight</u>	
Velocity at stated depth:		<u>—</u>	
Color:	<u>brownish green</u>		
Odor:	<u>Ø</u>		
Other Observations:			
Comments:			
pH: 1 <u>7.37</u> 2 <u>7.21</u> 3 <u>7.19</u>			
Cond: 1 <u>98</u> 2 <u>98</u> 3 <u>98</u>			
Recorded by: <u>BW</u>		Other Monitoring Personnel: <u>EA</u>	



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Water Quality Monitoring Form			
Station ID: <u>RAP-WCU # 050914</u>		Date: <u>9/14/05</u>	Time: <u>0910</u>
Project Name: <u>CASCO</u>		Project Number:	
Coordinates Datum:			
Lat/Northing:		Long/Easting:	
Weather/River Stage/Flow Observations: <u>Downstream @ 3' 0.20ft/s</u> <u>Falling tide</u> <u>is down river</u>			
Status/Description of Operation at Time of Sampling: <u>Dredging ongoing w/ clam shell</u>			
Depth to Bottom: <u>27</u> (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1</u> (m)	<u>8.73</u>	<u>19.30</u>	<u>7</u>
Depth 2: <u>13</u> (m)	<u>8.63</u>	<u>BMH</u> <u>19.36</u> <u>19.30</u>	<u>7</u>
Depth 3: <u>26</u> (m)	<u>8.43</u>	<u>19.22</u>	<u>11</u>
Other:			
Evidence of floating or suspended materials:		<u>BMH</u> <u>Small foam</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>BMH</u> <u>Small contiguous sheen</u>	
Discoloration and Turbidity:		<u>0</u>	
Velocity at stated depth:		<u>@ 3' 0.20ft/s</u>	
Color:	<u>Brownish Green</u>		
Odor:	<u>Boat / Diesel Exhaust</u>		
Other Observations:	<u>Partly Cloudy, Calm</u>		
Comments:			
pH: 1 <u>7.31</u> 2 <u>7.31</u> 3 <u>7.26</u>			
Cond: 1 <u>92</u> 2 <u>BMH</u> <u>HT 92</u> 3 <u>94</u>			
Recorded by: <u>BMH</u>		Other Monitoring Personnel: <u>EA</u>	



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Water Quality Monitoring Form			
Station ID: <u>RAA-WCD-050914</u>		Date: <u>9/19/05</u>	Time: <u>0900</u>
Project Name: <u>GASCO</u>		Project Number:	
Coordinates Datum:			
Lat/Northing:	<u>same</u>	Long/Easting:	<u>same</u>
Weather/River Stage/Flow Observations: <u>faling tide ; downriver is downriver</u>			
Status/Description of Operation at Time of Sampling: <u>Dredging ongoing w/ clam shell</u>			
Depth to Bottom: <u>45</u> (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1</u> (m)	<u>8.68</u>	<u>19.17</u>	<u>9</u>
Depth 2: <u>22.0</u> (m)	<u>8.61</u>	<u>19.19</u>	<u>9</u>
Depth 3: <u>44</u> (m)	<u>8.54</u>	<u>19.19</u>	<u>8</u>
Other:			
Evidence of floating or suspended materials:		<u>SMU</u> <u>small SWM</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>SMU</u> <u>Small Sheen "Dots"</u>	
Discoloration and Turbidity:		<u>0</u>	
Velocity at stated depth:		<u>---</u>	
Color:	<u>Greenish brown</u>		
Odor:	<u>---</u>		
Other Observations:			
Comments:			
pH: 1 <u>7.25</u> 2 <u>7.25</u> 3 <u>7.27</u>			
Cond: 1 <u>89</u> 2 <u>90</u> 3 <u>8.90</u>			
Recorded by: <u>SMU</u>		Other Monitoring Personnel: <u>EA</u>	



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Water Quality Monitoring Form			
Station ID: <u>RAAWCD2 050914</u>		Date: <u>9/14/05</u>	Time: <u>0930</u>
Project Name: <u>GASCO</u>		Project Number:	
Coordinates Datum:			
Lat/Northing: <u>SAME</u>	Long/Easting: <u>SAME</u>		
Weather/River Stage/Flow Observations: <u>Falling tide Dammer is low stream</u>			
Status/Description of Operation at Time of Sampling: <u>Dredging temporarily stopped during this round ~ 0910</u>			
Depth to Bottom: _____ (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1</u> (m)	<u>8.68</u>	<u>19.18</u>	<u>11</u>
Depth 2: <u>22</u> (m)	<u>8.59</u>	<u>19.19</u>	<u>12</u>
Depth 3: <u>44</u> (m)	<u>8.48</u>	<u>19.19</u>	<u>17</u>
Other:			
Evidence of floating or suspended materials:		<u>0</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>some sheen particles in water</u>	
Discoloration and Turbidity:		<u>0</u>	
Velocity at stated depth:			
Color:	<u>greenish brown</u>		
Odor:	<u>None detected</u>		
Other Observations:			
Comments:			
pH: 1 <u>7.25</u> 2 <u>7.25</u> 3 <u>7.25</u>			
Cond: 1 <u>90</u> 2 <u>90</u> 3 <u>90</u>			
Recorded by: <u>BMH</u>		Other Monitoring Personnel: <u>EA</u>	



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Water Quality Monitoring Form			
Station ID: <u>RAA-WQ-050914</u>		Date: <u>9/14/05</u>	Time: <u>0955</u>
Project Name: <u>CASCO</u>		Project Number:	
Coordinates Datum:			
Lat/Northing:		Long/Easting:	
Weather/River Stage/Flow Observations: <u>Downstream, partly cloudy</u> <u>Falling tide</u>			
Status/Description of Operation at Time of Sampling: <u>Dredging ongoing w/ Clanshell</u>			
Depth to Bottom: <u>38</u> (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1</u> (m)	<u>8.67</u>	<u>19.21</u>	<u>12</u>
Depth 2: <u>20</u> (m)	<u>8.58</u>	<u>19.20</u>	<u>13</u>
Depth 3: <u>37</u> (m)	<u>8.45</u>	<u>19.21</u>	<u>15</u>
Other:			
Evidence of floating or suspended materials: <u>—</u>			
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>Small green pockets inside secondary containment</u>	
Discoloration and Turbidity: <u>—</u>			
Velocity at stated depth: <u>—</u>			
Color:	<u>greenish brown</u>		
Odor:	<u>—</u>		
Other Observations:	<u>Adjacent to secondary containment</u>		
Comments:			
pH: 1 <u>7.26</u> 2 <u>7.25</u> 3 <u>7.24</u>			
Cond: 1 <u>90</u> 2 <u>90</u> 3 <u>91</u>			
Recorded by: <u>BML</u>		Other Monitoring Personnel: <u>EA</u>	

REVERSE CURRENT



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Water Quality Monitoring Form			
Station ID: <u>PAAWCU # 050916</u>		Date: <u>9/16/05</u>	Time: <u>1525</u>
Project Name: <u>GASCO</u>		Project Number:	
Coordinates Datum:			
Lat/Northing: <u>same as previous</u>		Long/Easting:	
Weather/River Stage/Flow Observations: <u>reversed current Flood</u>			
Status/Description of Operation at Time of Sampling: <u>Dredging</u>			
Depth to Bottom: <u>13-14 ft</u>			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1 (ft)</u> <u>PH</u>	<u>9.12</u>	<u>18.90</u>	<u>5</u>
Depth 2: <u>21 (m)</u> <u> </u>	<u>8.87</u>	<u>18.86</u>	<u>7</u>
Depth 3: <u>42 (m)</u> <u>↓</u>	<u>8.79</u>	<u>18.87</u>	<u>9</u>
Other:			
Evidence of floating or suspended materials:			
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)			
Discoloration and Turbidity:			
Velocity at stated depth:			
Color:			
Odor:			
Other Observations:			
Comments: pH: 1 <u>7.33</u> 2 <u>7.31</u> 3 <u>7.30</u> EC 1 <u>84</u> 2 <u>84</u> 3 <u>84</u>			
Recorded by:		Other Monitoring Personnel: <u>JA / JS</u>	



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Water Quality Monitoring Form			
Station ID: <i>RAA-WCD12-050916</i>	Date: <i>9/16/05</i>	Time: <i>1538</i>	
Project Name: <i>GASCO</i>		Project Number:	
Coordinates Datum:			
Lat/Northing: <i>Same</i>	Long/Easting:		
Weather/River Stage/Flow Observations: <i>Reverse flow flood</i>			
Status/Description of Operation at Time of Sampling: <i>stopped dredging</i>			
Depth to Bottom: _____ (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <i>1'</i> (m)	<i>9.13</i>	<i>18.87</i>	<i>10</i>
Depth 2: <i>6'</i> (m)	<i>9.05</i>	<i>18.88</i>	<i>10</i>
Depth 3: <i>11'</i> (m)	<i>9.03</i>	<i>18.88</i>	<i>10</i>
Other:			
Evidence of floating or suspended materials:		<i>Ø</i>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<i>Ø</i>	
Discoloration and Turbidity:		<i>Ø</i>	
Velocity at stated depth:			
Color:	<i>Greenish brown</i>		
Odor:	<i>None detected</i>		
Other Observations:			
Comments: <p>pH: 1 <u><i>7.31</i></u> 2 <u><i>7.28</i></u> 3 <u><i>7.30</i></u> EC <i>84</i> <i>84</i> <i>84</i></p>			
Recorded by: <i>GA</i>	Other Monitoring Personnel: <i>TS, AS</i>		

RAVENSE CURRENT
 ANCHOR ENVIRONMENTAL, L.L.C.

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Water Quality Monitoring Form			
Station ID: <i>RAA-WCD28050916</i>		Date: <i>9/16/05</i>	Time: <i>1545</i>
Project Name: <i>Gasco</i>		Project Number:	
Coordinates Datum:			
Lat/Northing:	<i>same</i>	Long/Easting:	<i>same</i>
Weather/River Stage/Flow Observations: <i>Flood Reverse Current</i>			
Status/Description of Operation at Time of Sampling: <i>no dredging - it stopped</i>			
Depth to Bottom: _____ (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <i>1 (m)</i>	<i>9.22</i>	<i>18.74</i>	<i>10</i>
Depth 2: <i>18 (m)</i>	<i>9.03</i>	<i>18.88</i>	<i>9.10</i>
Depth 3: <i>35 (m)</i>	<i>8.96</i>	<i>18.89</i>	<i>10</i>
Other:			
Evidence of floating or suspended materials:		<i>Ø</i>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<i>Ø</i>	
Discoloration and Turbidity:		<i>Ø</i>	
Velocity at stated depth:			
Color:	<i>Greenish brown</i>		
Odor:	<i>None detected</i>		
Other Observations:			
Comments: pH: 1 <u><i>7.36</i></u> 2 <u><i>7.30</i></u> 3 <u><i>7.28</i></u> COND 1 <u><i>84</i></u> 2 <u><i>84</i></u> 3 <u><i>84</i></u>			
Recorded by: <i>GA</i>		Other Monitoring Personnel: <i>TS, AB</i>	



Reverse

Current

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Water Quality Monitoring Form			
Station ID: <u>1AA-WCD3^A 050916</u>		Date: <u>9-16-05</u>	Time: <u>1548</u>
Project Name: <u>GASCO</u>		Project Number:	
Coordinates Datum:			
Lat/Northing:	<u>same</u>	Long/Easting:	
Weather/River Stage/Flow Observations: <u>Flood reverse current</u>			
Status/Description of Operation at Time of Sampling: <u>Spurred discharge</u>			
Depth to Bottom: <u>42²</u> (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1</u> (m)	<u>9.12</u>	<u>18.90</u>	<u>9</u>
Depth 2: <u>22</u> (m)	<u>9.02</u>	<u>18.91</u>	<u>8</u>
Depth 3: <u>41</u> (m)	<u>8.99</u>	<u>18.91</u>	<u>8</u>
Other:			
Evidence of floating or suspended materials:		<input checked="" type="checkbox"/>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<input checked="" type="checkbox"/>	
Discoloration and Turbidity:		<input checked="" type="checkbox"/>	
Velocity at stated depth:		<input checked="" type="checkbox"/>	
Color:			
Odor:		<u>None detected</u>	
Other Observations:			
Comments: pH: 1 <u>7.28</u> 2 <u>7.29</u> 3 <u>7.30</u> Cond <u>84</u> <u>84</u> <u>84</u>			
Recorded by: <u>EA</u>		Other Monitoring Personnel: <u>TS</u> <u>AS</u>	

APPENDIX B

TRANSFER FACILITY WQ MONITORING LOG SHEETS



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Water Quality Monitoring Form			
Station ID: ^{UPstream} EA 300 TF-WCU	Date: 9-1 ⁴ 6-05	Time: 10:45	
Project Name: Gasco	Project Number: 000029-02 BG-9T-6		
Coordinates Datum:			
Lat/Northing:		Long/Easting:	
Weather/River Stage/Flow Observations: <i>Sunny</i> Approx. 8-10 mph breeze from west 70-75% Status/Description of Operation at Time of Sampling: <i>Unloading was ceased</i>			
Depth to Bottom: <i>15.5 (m) Ft.</i>			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <i>1 (m) Ft.</i>	<i>8.80</i>	<i>19.67</i>	<i>1.74</i>
Depth 2: <i>8 (m) Ft.</i>	<i>8.98</i>	<i>19.51</i>	<i>2.41</i>
Depth 3: <i>14.5 (m) Ft.</i>	<i>9.03</i>	<i>19.43</i>	<i>2.67</i>
Other:			
Evidence of floating or suspended materials:		<i>None</i>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<i>None</i>	
Discoloration and Turbidity:		<i>None</i>	
Velocity at stated depth:			
Color:			
Odor:			
Other Observations:			
Comments: <i>pH: 1 <u>7.96</u> 2 <u>8.03</u> 3 <u>8.06</u></i>			
Recorded by: <i>Craig Wells</i>	Other Monitoring Personnel: <i>Steve Harguain</i>		



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Water Quality Monitoring Form			
Station ID: ^{Downstream} BS 150 TF-WCD1	Date: 9-14-05	Time: 10:15	
Project Name: Gasco	Project Number: 000029-02 B&G T6		
Coordinates Datum:			
Lat/Northing:		Long/Easting:	
Weather/River Stage/Flow Observations: Sunny slight breeze from west			
Status/Description of Operation at Time of Sampling: Unloading Barge, Tug departed approx 09:30			
Depth to Bottom: 15 (m)			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: 1 (m) FT	8.56	19.61	2.43
Depth 2: 7.5 (m) FT	8.80	19.56	2.14
Depth 3: 14 (m) FT	8.26	19.58	2.31
Other:			
Evidence of floating or suspended materials:		Minimal Floating debris	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		None	
Discoloration and Turbidity:		None	
Velocity at stated depth:			
Color:			
Odor:			
Other Observations:			
Comments: pH: 1 <u>7.89</u> 2 <u>7.99</u> 3 <u>8.00</u>			
Recorded by: Craig Wells	Other Monitoring Personnel: Steve Harquail		



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Water Quality Monitoring Form			
Station ID: <u>TF-WCU Upstream 300</u>	Date: <u>9-17</u>	Time: <u>0912</u>	
Project Name: <u>Gasco</u>	Project Number: <u>000029-02</u>		
Coordinates Datum:			
Lat/Northing:		Long/Easting:	
Weather/River Stage/Flow Observations: <u>57° overcast 8-10 mph from west</u>			
Status/Description of Operation at Time of Sampling: <u>Barge in place slow truck loading</u>			
Depth to Bottom: <u>13 ft</u>			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1 ft</u>	<u>8.91</u>	<u>18.53</u>	<u>2.28</u>
Depth 2: <u>6.5 ft</u>	<u>8.85</u>	<u>18.53</u>	<u>1.99</u>
Depth 3: <u>12 ft</u>	<u>8.87</u>	<u>18.54</u>	<u>2.13</u>
Other:			
Evidence of floating or suspended materials:		<u>None</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>None</u>	
Discoloration and Turbidity:		<u>None</u>	
Velocity at stated depth:			
Color:			
Odor:			
Other Observations:			
Comments: pH: 1 <u>7.92</u> 2 <u>7.98</u> 3 <u>7.99</u>			
Recorded by: <u>Craig wells</u>	Other Monitoring Personnel: <u>Steve Harguail</u>		



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Water Quality Monitoring Form			
Station ID: <u>TF-WCDI-Down Stream 150</u>		Date: <u>9-17-05</u>	Time: <u>0830</u>
Project Name: <u>Gasco</u>		Project Number: <u>000029-02</u>	
Coordinates Datum:			
Lat/Northing:		Long/Easting:	
Weather/River Stage/Flow Observations: <u>wind out of west 57°, overcast, 8-10 mph</u>			
Status/Description of Operation at Time of Sampling: <u>Barge in place, no tug. slow truck loading, material bridging in hopper.</u>			
Depth to Bottom: <u>21.5 (m) ft</u>			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1 (m) ft</u>	<u>8.91</u>	<u>18.57</u>	<u>1.77</u>
Depth 2: <u>11.5 (m) ft</u>	<u>8.83</u>	<u>18.55</u>	<u>2.63</u>
Depth 3: <u>20.5 (m) ft</u>	<u>8.82</u>	<u>18.55</u>	<u>2.24</u>
Other:			
Evidence of floating or suspended materials:		<u>None</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>None</u>	
Discoloration and Turbidity:		<u>None</u>	
Velocity at stated depth:			
Color:			
Odor:			
Other Observations:			
Comments: pH: 1 <u>7.93</u> 2 <u>8.02</u> 3 <u>8.01</u>			
Recorded by: <u>Craig Wells</u>		Other Monitoring Personnel: <u>Steve Hargrave</u>	



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Water Quality Monitoring Form			
Station ID: <u>Upstream TF-WCU 300</u>	Date: <u>9-17-05</u>	Time: <u>13:00</u>	
Project Name: <u>Gasco</u>	Project Number: <u>000029-02</u>		
Coordinates Datum:			
Lat/Northing:		Long/Easting:	
Weather/River Stage/Flow Observations: <u>65°, slight breeze from west, approx. 20% overcast</u>			
Status/Description of Operation at Time of Sampling: <u>Offloading stopped for lunch</u>			
Depth to Bottom: <u>14</u> <u>ft.</u>			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1</u> <u>ft.</u>	<u>9.18</u>	<u>18.81</u>	<u>2.04</u>
Depth 2: <u>7</u> <u>ft.</u>	<u>9.07</u>	<u>18.77</u>	<u>1.93</u>
Depth 3: <u>13</u> <u>ft.</u>	8.07 <u>9.06</u>	<u>18.76</u>	<u>1.86</u>
Other:			
Evidence of floating or suspended materials:		<u>None</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>None</u>	
Discoloration and Turbidity:		<u>None</u>	
Velocity at stated depth:			
Color:			
Odor:			
Other Observations:			
Comments: <u>pH: 1 <u>7.98</u> 2 <u>8.04</u> 3 <u>8.04</u></u>			
Recorded by: <u>Craig Wells</u>	Other Monitoring Personnel: <u>Steve Haquai!</u>		



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Water Quality Monitoring Form			
Station ID: ^{TF-WCD} Downstream 150		Date: 9-17-05	Time: 12:45
Project Name: Gasco		Project Number: 000029-02	
Coordinates Datum:			
Lat/Northing:		Long/Easting:	
Weather/River Stage/Flow Observations: 65°, slight breeze from west, approx. 20% overcast			
Status/Description of Operation at Time of Sampling: Offloading stopped for lunch			
Depth to Bottom: 15.5 (m) ft			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: 1 (m) ft.	8.88	18.93	1.72
Depth 2: 7.5 (m) ft.	9.04	18.92	1.79
Depth 3: 14.5 (m) ft	9.09	18.92	1.69
Other:			
Evidence of floating or suspended materials:		None	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		None	
Discoloration and Turbidity:		None	
Velocity at stated depth:			
Color:			
Odor:			
Other Observations:			
Comments: pH: 1 <u>7.98</u> 2 <u>8.03</u> 3 <u>8.03</u>			
Recorded by: Craig Wells		Other Monitoring Personnel: Steve Haquail	



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Water Quality Monitoring Form			
Station ID: <u>Upstream 300 TF-WCU</u>		Date: <u>9-17-05</u>	Time: <u>16:45</u>
Project Name: <u>Gasto</u>		Project Number: <u>000029-02</u>	
Coordinates Datum:			
Lat/Northing:		Long/Easting:	
Weather/River Stage/Flow Observations: <u>75° Sunny, slight breeze from west</u>			
Status/Description of Operation at Time of Sampling: <u>offloading barge</u>			
Depth to Bottom: <u>13 m Ft</u>			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1 (m) Ft.</u>	<u>9.43</u>	<u>19.36</u>	<u>1.70</u>
Depth 2: <u>6.5 (m)</u>	<u>9.32</u>	<u>19.35</u>	<u>1.78</u>
Depth 3: <u>12 (m)</u>	<u>9.41</u>	<u>19.30</u>	<u>1.69</u>
Other:			
Evidence of floating or suspended materials:		<u>None</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>None</u>	
Discoloration and Turbidity:		<u>None</u>	
Velocity at stated depth:			
Color:			
Odor:			
Other Observations:			
Comments: <u>pH: 1 <u>8.08</u> 2 <u>8.13</u> 3 <u>8.15</u></u>			
Recorded by: <u>Craig Wells</u>		Other Monitoring Personnel: <u>Steve Harquai</u>	



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Water Quality Monitoring Form			
Station ID: <u>Downstream TF-WCO</u> <u>130</u>		Date: <u>9-17-05</u>	Time: <u>16:00</u>
Project Name: <u>Gasco</u>		Project Number: <u>000029-02</u>	
Coordinates Datum:			
Lat/Northing:		Long/Easting:	
Weather/River Stage/Flow Observations: <u>Clear, 3-5 mph From west, 75°</u>			
Status/Description of Operation at Time of Sampling: <u>offloading barge</u>			
Depth to Bottom: <u>11 1/2 (not ft.)</u>			
	Dissolved Oxygen (mg/L)	Temperature (C)	Turbidity (NTU)
Depth 1: <u>1 (not ft.)</u>	<u>9.03</u>	<u>19.40</u>	<u>1.77</u>
Depth 2: <u>8.5 (not ft.)</u>	<u>9.10</u>	<u>19.39</u>	<u>1.80</u>
Depth 3: <u>16.5 (not ft.)</u>	<u>9.07</u>	<u>19.35</u>	<u>2.29</u>
Other:			
Evidence of floating or suspended materials:		<u>NONE</u>	
Evidence of oil/hydrocarbon sheen: (Thickness, contiguous?, size, rate of dissipation)		<u>NONE</u>	
Discoloration and Turbidity:		<u>NONE</u>	
Velocity at stated depth:			
Color:			
Odor:			
Other Observations:			
Comments: pH: 1 <u>8.03</u> 2 <u>8.08</u> 3 <u>8.04</u>			
Recorded by: <u>Craig Wells</u>		Other Monitoring Personnel: <u>Steve Haquai</u>	