United States Department of the Interior

BUREAU OF RECLAMATION
Mid-Pacific Region
Tracy Office (CVP)
Route 1 Box 35
Byron, California 94514-9614

TAKE PRIDE IN AMERICA

IN REPLY
REFER TO:

DAO-435
ENV-5.00

OCT - 6 1994

Con'rnve w/ DMR
Remove add'l contam noted soil when remaining USTs are removed.

94 OCT -7 PM 2:44
ALCO HAZMAT

Ms. Eva Chu
Hazardous Material Specialist
Alameda County Health Agency
1131 Harbor Bay Parkway
Alameda, California 94502

Subject: Installation Report and Results of Testing for Ground-Water Contamination - Vehicle Maintenance Facility - Tracy Pumping Plant - - Central Valley Projects (CVP) CA

Dear Ms. Chu:

Enclosed is the Installation Report for the Bureau well which you requested.

If there are any questions, please contact Brian Shinmoto of my staff at (209) 836-6261.

Sincerely,

for Herbert S. Y. Ng
Acting Area Manager

Enclosure

cc: DAO-435

REGIONAL GEOLOGY SECTION
SACRAMENTO, CALIFORNIA

AUGUST 31, 1994

MEMORANDUM TO THE TECHNICAL FILES

FROM: Steven Sherer, Geologist

SUBJECT: Installation of Monitoring Well MW-7 and Results of Testing for Groundwater Contamination--Vehicle Maintenance Facility--Tracy Pumping Plant-- Central Valley Project, California.

At the request of the Delta Area Office (DAO), a groundwater contamination monitoring well, MW-7, was installed in the vicinity of the vehicle maintenance garage at the Tracy Pumping Plant on June 23, 1994. The purpose of this memorandum is to document the procedures used to install this well and to present the results of testing air, soil and groundwater during well installation. In addition, the test results of the groundwater sample collected three days after well completion is also noted.

Previous Work

On February 8, 1994, two underground storage tanks were removed from areas adjacent to the vehicle maintenance garage at the Tracy Pumping Plant by Cottle Engineering, a private contractor. One tank located on the south side of the garage was a 1,000 gallon fiberglass tank utilized for the storage of waste oil. The second tank located on the northwest side of the garage was a 2,000 gallon steel tank utilized for storage of regular leaded gasoline. Soils excavated during tank removal were stockpiled adjacent to the pits, and the pits were left open. Soil samples were collected after the tanks were removed. Soil samples taken from the gasoline tank excavation contained elevated concentrations of up to 130 mg/kg of Total Petroleum Hydrocarbons (TPH) in the form of gasoline (TPHg).

During previous site assessments, six monitoring wells (MW-1 through MW-6) were installed in or adjacent to the vehicle maintenance facility. Four of these wells, MW-1 through MW-4, were destroyed under permit from Alameda County just prior to the removal of the underground storage tanks. MW-5 is located approximately 400 feet north-northeast of the garage, and MW-6 is located 150 feet south of the garage. Following removal of the tanks, Cottle Engineering installed one monitoring well in the pit that formerly had contained the waste oil tank. However, in order to monitor the groundwater at this site for any downgradient migration of contaminants, an additional monitoring well, MW-7, was required.

Installation of Monitoring Well MW-7

Monitoring Well MW-7 is located 39.5 feet north and 8 feet west of the northwest corner of the vehicle maintenance garage at El. 56.9. The hole for the monitoring well was drilled with the CME-75 drill rig utilizing the 7 7/8-inch-diameter flight auger and dry core system with Standard Penetration Tests (SPTs) taken in selected intervals during drilling. Four 6-inch-long brass liners were used in each SPT spoon used. Material in the segment of liner selected for laboratory testing was capped with teflon and plastic end caps and sealed with aluminized tape. SPT samples were taken from between 4.7 to 5.2 feet (MW-7001) and 9.5 to 10.0 feet (MW-7002) for laboratory testing.

The hole was drilled to a total depth of 19.3 feet. The drill hole first encountered water at 9.7 feet of depth. The monitoring well consists of a 0.2-foot-long cap placed at the bottom of 12.0 feet of 0.01-inch machine-slotted, 2-inch-diameter, Schedule 40 PVC pipe. The top of the screened interval is at a depth of 7.2 feet in the monitoring well. Schedule 40, nonslotted PVC pipe was installed above the machine slotted pipe. The top of the monitoring well casing is 0.4 foot below ground surface and located inside a tamper-resistant traffic box set flush with the surface of the surrounding asphalt. A locking cap is mounted on top of the pipe. Number 2 Monterey sand was placed around the pipe from depths of 5.2 to 19.3 feet to backfill the drill hole. For a seal at the surface, bentonite pellets were used between the depths of 3.2 and 5.3 feet, and cement grout was used from the surface to 3.2 feet. The attached drill hole log describes the materials encountered and the monitoring well installation.

Decontamination

Both prior to and following drilling, all down hole drilling and sampling equipment was steam-cleaned, rinsed in deionized water and then allowed to air dry. In order to capture the water and contaminants from the washing and rinsing operations, three adjoining pits were constructed using 8-foot-long, 4- by 4-inch boards laid out and covered with 10-mil thick visquene. Two of these pits were eight feet square with the third pit being 16 feet by 8 feet. Water collected in these pits was hand bailed into a 55-gallon waste disposal drum.

Personal protective equipment utilized during drilling operations was level D, and consisted of coveralls, steel toed boots, hard hats, and gloves.

Monitoring for Contaminants During Drilling

During drilling, the air around soils brought to the surface by the rotating flight auger was periodically sampled with a photo ionization detector (PID). No contamination was detected. These materials were then shoveled onto the adjacent pile of soil from underground storage tank removal. Dry core samples from this drill hole were also "sniffed" with

the PID, then wrapped in visquene, marked, and stored at the west end of this pile of soil. The air in the drill hole was periodically tested with the PID, and no contamination was detected. During drilling operations, soil samples were taken from the dry core between 7.3 and 7.5 feet (top of the sand zone) and at 9.4 to 9.6 feet (just above the water contact). These samples were placed in a plastic container, which was then sealed, shaken and placed in the sunlight for at least 15 minutes. This container was then opened, and the air inside was tested with the PID for contaminants. No contamination of soils was detected by this method. Air at the drill site was monitored with a TMX 410, for lower explosive limit vapors and level of oxygen at the site. No combustible organic vapors were detected except on two brief occasions when vehicles in an adjacent area were being filled with gasoline. Once the vehicles were filled the vapor readings returned to normal (background levels).

Results of Laboratory Testing

Soil sample MW-7001 (4.7- to 5.2-feet) had no detectable contamination of TPHg, Benzene, Ethylbenzene, Toluene, or Xylenes. Soil sample MW-7002 (9.5- to 10.0-feet) had no detectable TPHg, Ethylbenzene, Toluene, or Xylenes, but this sample did have a 0.02 mg/kg detection of Benzene. However, the detection limit for this test is 0.02 mg/kg and when readings are at the detection limit they are considered to be inconclusive.

Water sample MW-7003 taken three days after the well was initially developed had no detectable TPHg, Benzene, Ethylbenzene, Toluene, or Xylenes.

Conclusions

No hydrocarbon contamination of the groundwater or soil is detected downgradient from the former site of the unleaded gasoline tank. Indications are that the contamination detected in the excavated soils from the tank removal is minor, and is probably restricted to the area where the gasoline tank was located.

Recommendations

Based on the absence of any hydrocarbon contamination encountered during the installation and initial monitoring in well MW-7, it is apparent that there is no groundwater or soil contamination outside the immediate area of the gasoline tank pit. Therefore, we recommend that the Quality Assurance and Environmental Branch (MP-470) perform tests in the pit walls. It is possible that only minor amounts of additional pit excavation will be required to remove the remaining contaminated soil. If so, this soil could be aerated at the site and, after aeration, returned to the pit.

Steven Sherer, Geologist

Noted: _____ 8/31/94
J. Wendel Carlson, Project Leader — Date

Noted: _____ 8/31/94
David M. Sparks; Head, Engineering Section — Date

Noted: _____ 8/31/94
Charles L. Howard, Regional Geologist — Date

GEOLOGIC LOG OF DRILL HOLE NO. MW-7

FEATURE: TRACY PUMPING PLANT
LOCATION: SEE NOTES
BEGUN: 06-21-94 FINISHED: 06-23-94
DEPTH AND ELEV. OF WATER LEVEL AND DATE MEASURED: SEE NOTES, SHEET 2

PROJECT: CENTRAL VALLEY PROJECT
COORDINATES: N 473879 E 1688170
TOTAL DEPTH: 19.3
DEPTH TO BEDROCK:

STATE: CALIFORNIA
GROUND ELEVATION: 56.9
ANGLE FROM HORIZONTAL: 90 BEARING:
HOLE LOGGED BY: STEVEN SHERER
REVIEWED BY:

NOTES	DEPTH	HOLE TYPE/SIZE	% RECOVERY	TPH-GASOLINE	BENZENE	ETHYLBENZENE	TOLUENE	TOTAL XYLENESS	[a] BLOWS/0.5 FT	[b] SPT 0 50	CLASSIFICATION	DEPTH	FIELD VISUAL CLASSIFICATION AND PHYSICAL CONDITION
ALL MEASUREMENTS ARE IN FEET FROM GROUND SURFACE. DRILLED BY: Regional Drill Crew; Al Velarde, driller. PURPOSE OF HOLE: To install piezometer to monitor for groundwater contamination by petroleum products from nearby gasoline and diesel underground storage tanks. LOCATION OF HOLE: Vehicle maintenance facility; 39.5 ft north and 8 ft west of northwest corner of garage. DRILL RIG: CME 75 DRILLING & SAMPLING METHODS: 0.0 to 1.0 ft: 3-3/4 inch by 7-5/8 inch flight auger with pilot bit. 1.0 to 19.3 ft: 3-inch i.d. by 5 ft split barrel dry coring system (FADC) except: 4.2 to 5.7 ft and 9.2 to 10.7 ft: Standard penetration test (SPT). See "COMMENTS" below for details of SPTs. DRILLING CONDITIONS: 0.0 to 19.3 ft: Slow and smooth. HYDRAULIC PRESSURE GAUGE READINGS (LBS/SQUARE INCH): Interval From (feet) / To (feet) / Gauge Reading 0.0 / 4.2 / 300 4.2 / 9.2 / 300/400 9.2 / 14.2 / 300/250 14.2 / 19.2 / 300/450/350 HOLE COMPLETION: Installed 12.0 ft of 0.010-inch machine-slotted Schedule 40 PVC screen at 7.2 to 19.2 ft and Schedule 40 PVC pipe from 0.4 to 7.3 ft. Piezometer was plugged at bottom with 0.1 ft long cap. Backfilled hole as follows (also see diagram, Sheet 2): from 19.3 to 5.2 ft, Monterey No. 2-size sand; from 5.2 to 3.2 ft, bentonite hole plug;	5 10 15 20	FA FADC SPT FADC SPT FADC BOTTOM OF HOLE	0 100 100 100 100 100	<1.0	<0.02	<0.02	<0.02	<0.02	3 8 14 22 3 3 5 5 6	Asphalt Road Base 22	CH CH/CL SP-SM CH-CL SC SP CL/SC ML/SM	5 10 15 20	0.0 to 0.4 ft: Asphalt. 0.4 to 0.8 ft: Roadbase material, GW-GM; maximum size 3 inches. 0.8 to 2.8 ft: Fat Clay, CH. About 100% fines with high plasticity, high dry strength, no dilatancy, high toughness; dry; dark brown. 2.8 to 7.3 ft: Lean to Fat Clay, CH/CL. About 95% fines with high plasticity, medium to high dry strength, no dilatancy, high toughness; about 5% fine, subangular to rounded sand; maximum size fine sand; dry; yellow brown. 7.3 to 11.3 ft: Poorly Graded Sand with Silt, SP-SM. About 90% fine, subangular to rounded sand; about 10% nonplastic fines; maximum size fine sand; dark brown. 7.3 to 9.7 ft: Dry. 9.7 to 11.3 ft: Saturated. 11.3 to 12.9 ft: Lean to Fat Clay, CH/CL. About 100% fines with medium to high plasticity, high dry strength, no dilatancy, medium to high toughness; saturated; dark brown. 12.9 to 14.2 ft: Clayey Sand, SC. About 60% fine, subangular to rounded sand; about 40% fines with medium to high plasticity; maximum size fine sand; saturated; dark brown. 14.2 to 15.2 ft: Poorly Graded Sand, SP. About 95% fine, subrounded to rounded sand; about 5% fines with medium to high plasticity; maximum size fine sand; saturated; dark brown. 15.2 to 18.8 ft: Sandy Lean Clay, CL/SC. About 50% fine to medium, angular to rounded sand; about 50% fines with to high plasticity, medium dry strength, no dilatancy, medium to high toughness; maximum size medium sand; saturated; dark yellow brown. 18.8 to 19.3 ft: Sandy Silt, ML/SM. About 55% fines with low plasticity, low dry strength, fast dilatancy, low toughness; about 45%

WATER SAMPLE MW-7003: < 20 | < 0.5 | < 0.5 | < 0.5 | < 0.5

SAMPLE MW-7001

SAMPLE MW-7002: <1.0 | 0.02 | <0.02 | <0.02 | <0.02

NOTES ON LABORATORY TESTING OF SOIL & WATER SAMPLES:

THE MINIMUM DETECTION LIMIT FOR THE TEST IS 0.02 mg/kg, AND WHEN THE RESULTS ARE AT THE DETECTION LIMIT, THEY ARE CONSIDERED TO BE INCONCLUSIVE.

WATER SAMPLE MW-7003 WAS TAKEN THREE DAYS AFTER THE WELL WAS INITIALLY DEVELOPED.

COMMENTS:

THE SPTS WERE CONDUCTED USING THE FOLLOWING EQUIPMENT:
1) CME 140 LB AUTOMATIC SPT HYDRAULIC HAMMER WITH 30-INCH DROP. CALIBRATED ENERGY RATING IS 95% (MEASURED AT MORMON ISLAND AUXILIARY DAM, 1992).
2) MOBILE NWJ UPSET DRILL RODS, APPROX. 57.5 LBS/10 FT.
3) PENETRATION SAMPLER WITH SPLIT INNER BARREL; 2.95 FT LONG, 1-3/8 INCH I.D., 2-INCH O.D.; LINER NOT USED.

SOIL AND WATER SAMPLE ANALYSES PERFORMED BY STATE CERTIFIED LAB (NUMBER 1312) AGRICULTURE AND PRIORITY POLLUTANTS LABORATORIES, INC. OF FRESNO, CA.

[a] = INITIAL 0.5 FT OF PENETRATION
[a] = FIRST 0.5 FT OF TEST PENETRATION
[a] = LAST 0.5 FT OF TEST PENETRATION

[b] TOTAL BLOWS FOR 1.0 FT TEST PENETRATION.

FA: 3-3/4 inch by 7-5/8 inch flight auger with pilot bit.
FADC: 3-inch i.d. by 5 ft split barrel dry coring system.
SPT: Standard penetration test.

GEOLOGIC LOG OF DRILL HOLE NO. MW-7

FEATURE: TRACY PUMPING PLANT
LOCATION: SEE NOTES
BEGUN: 06-21-94 FINISHED: 06-23-94
DEPTH AND ELEV. OF WATER LEVEL AND DATE MEASURED: SEE NOTES BELOW.

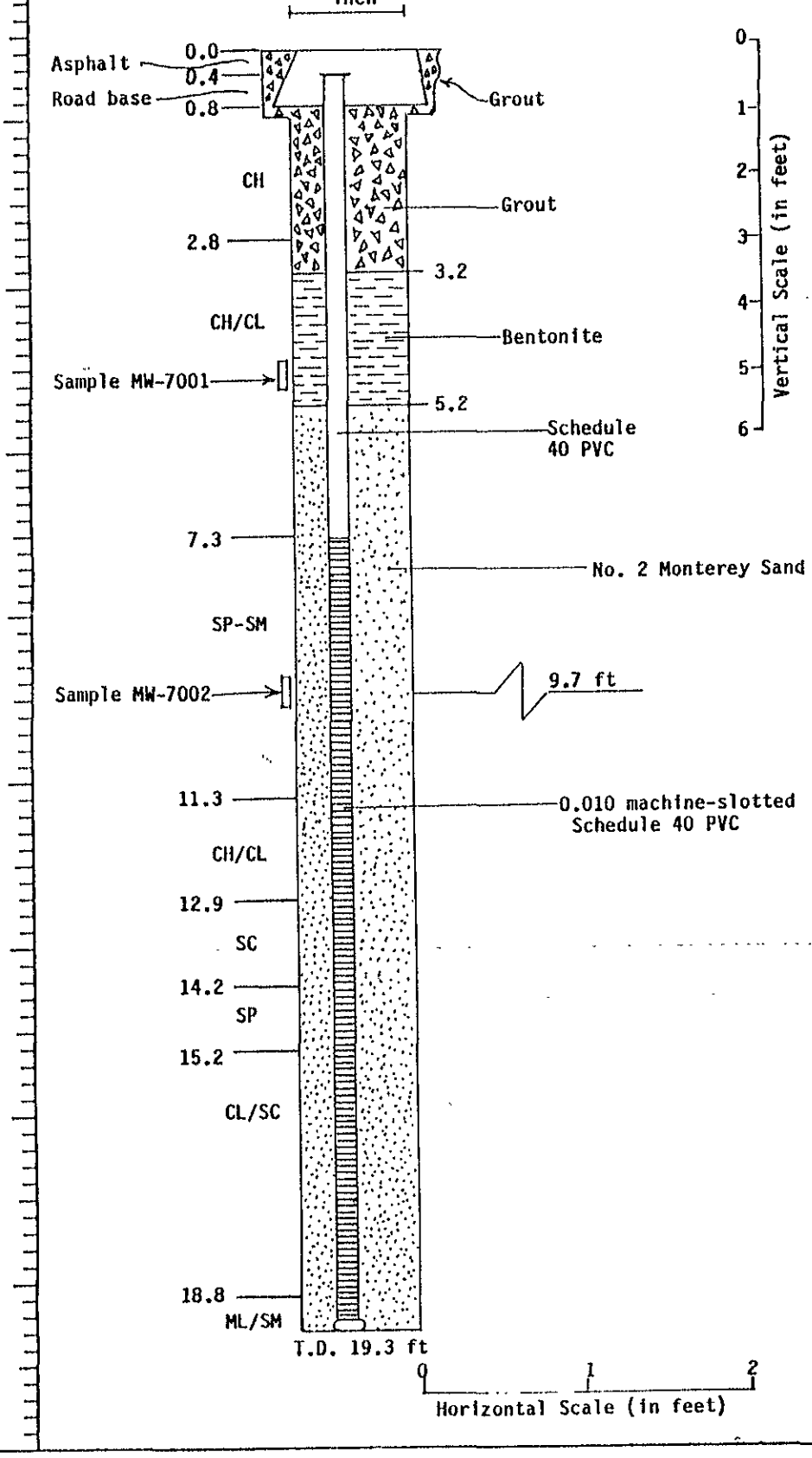
PROJECT: CENTRAL VALLEY PROJECT
COORDINATES: N 473879 E 1688170
TOTAL DEPTH: 19.3
DEPTH TO BEDROCK:

STATE: CALIFORNIA
GROUND ELEVATION: 66.9
ANGLE FROM HORIZONTAL: 90 BEARING:
HOLE LOGGED BY: STEVEN SHERER
REVIEWED BY:

NOTES	DEPTH	HOLE TYPE/SIZE	% RECOVERY	TPH-GASOLINE	BENZENE	ETHYLBENZENE	TOLUENE	TOTAL XYLENESS	BLOWS/0.5 FT	SPT	CLASSIFICATION	DEPTH	FIELD VISUAL CLASSIFICATION AND PHYSICAL CONDITION
from 3.2 to 1.0 ft, grout as auger flights were pulled. Enlarged diameter of hole at top 1.0 ft of depth for meter box. Installed meter box by grouting outside box to surface and inside of box to 0.8 ft depth. Installed locking cap on top of piezometer. Top of meter box has vandal-resistant cover.									0	50			fine, subangular to rounded sand; maximum size fine sand; saturated; medium gray brown.

DEPTH TO WATER (Below ground surface):
Water encountered at 9.7 while drilling.
6-23-94: 12.1 ft (14 hours after installation).
6-24-94: 12.1 FT
6-27-94: 12.1 FT
6-30-94: 11.6 FT

DIAGRAM OF HOLE COMPLETION:



COMMENTS: