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**OPERATIONS UPDATE AT
GIANT'S BLOOMFIELD REFINERY**

March 8, 1990

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1.0 INTRODUCTION

Giant Industries Arizona, Inc. (Giant) has operated a ground-water remediation system at Giant's Bloomfield Refinery under an Oil Conservation Division (OCD) approved discharge plan since December of 1988. Geoscience Consultants Limited (GCL) has reviewed current operations under the discharge plan at the refinery. In doing so, GCL has determined that several operational changes in Giant's ground water-remediation system have occurred. These are noted in section 2.0 of this document and in the accompanying revised SPCC plan. GCL has also determined that several activities under the discharge plan may no longer be effective. Consequently, in section 3.0 of this document, some revisions to the discharge plan procedures are proposed.

2.0 UPDATE TO THE SPCC PLAN

Mr. Timothy A. Kinney has replaced Mr. Robert McClenahan as the person responsible for coordination of all environmental issues at Giant's Bloomfield Refinery, including implementation of the SPCC plan. Mr. Kinney has been referenced in the plan as the person responsible for training on-site personal to implement the plan and as the primary contact in case of emergencies. A new list of contacts is included in the revised version of the plan, enclosed with this transmittal, dated March 9, 1990.

Recent engineering decisions to dismantle above-ground water storage tanks at Giant's Bloomfield refinery and move them to a different facility will affect Giant's SPCC plan for storage of recovered ground water at the site. Storage tank 24 has been dismantled and is no longer part of the plan. Tanks 21 and 35 are available for use at the facility for ground water storage. The total storage capacity has been revised to reflect the change of storage tanks.

3.0 MODIFICATION OF QUARTERLY SAMPLING PROCEDURES

3.1 REQUEST TO CHANGE WELLS BEING SAMPLED

Appendix A of this report is titled Summary of Monitoring and Reporting and should be inserted in place of section seven in Giant's discharge plan. Giant's quarterly sampling presently includes sampling from monitor wells GBR-6, GBR-8 and GBR-13. These wells are located where floating product commonly occurs. The analytical results of samples collected from these locations are being affected by the floating product and do not represent the true concentrations of dissolved constituents in ground water. Because the concentrations of the constituents being analyzed are those of water with entrained droplets of non-aqueous phase hydrocarbons, the analytical results are higher than what is actually representative of dissolved hydrocarbons in the ground water. Accordingly, Giant proposes to sample ground water from recovery wells GRW-3, GRW-4 and GRW-6, in lieu of sampling GBR-6, GBR-8 and GBR-13, to more accurately characterize the ground water at the facility, starting with the first quarterly sampling of 1990.

3.2 REQUEST TO CHANGE ANALYTES BEING SAMPLED

The polynuclear aromatic hydrocarbons (PAHs) present at Giant's Bloomfield refinery correlate with high concentrations of benzene, toluene, ethylbenzene and total xylenes (BTEX). Table 3-1 summarizes both total PAH and total BTEX results for samples taken at the refinery for the first three quarters of 1989. Because we see no evidence that PAH results are assisting in the remedial action planning or operation, Giant proposes to discontinue the costly analysis for PAHs on the first quarterly sampling of 1990. Analysis for PAHs will be performed during the last quarterly sampling of the year when the annual tank/process stream sampling is performed.

TABLE 3-1
BTEX AND PAH RESULTS

<u>LOCATION</u>	<u>9/13/89</u>		<u>6/13/89</u>		<u>3/14/89</u>	
	<u>BTEX</u>	<u>PAH</u>	<u>BTEX</u>	<u>PAH</u>	<u>BTEX</u>	<u>PAH</u>
GBR 6	5,160	782	491	44	1,014	0
GBR 8	8,180	799	14,100	96,000	9,325	388.4
GBR 13	4,340	1,160	5,120	93,700	632.2	0
GRW 13	4.7	0	0	37	0	0
GBR 15	33	0	23.7	106	37.6	18.9
GBR-17	0	0	0	NA	0	5.8
GBR-24D	51.8	12	70.9	53	115.4	0
GBR 30	60.26	11	4.3	4,300	22.3	0
GBR 31	.38	0	0	37	0.3	54.4
GBR 33	24.9	22.39	194	4,150	50.5	0

BTEX = Total benzene, toluene, ethyl benzene and xylene

PAH = Total Polynuclear Aromatic Hydrocarbons

NA = Not Analyzed

Results are in parts per billion

APPENDIX A
SUMMARY OF MONITORING AND REPORTING

Revised March 8, 1990

7.0 SUMMARY OF MONITORING AND REPORTING

7.1 MONITORING

Weekly

- Record the number of cycles of each air pump.
- Record the number of gallons pumped by each submersible pump ~~and the destination of the pumped water.~~¹
- Record the volume of influent ~~and effluent~~² at the air stripper ~~and the source of the influent.~~³
- Record the liquid level in each storage tank 102, 106, ~~21, 22, 23,~~⁴ 24, 27, 32, 34, ~~35~~ and 37.
- Visually inspect all aboveground valves, joints and pipelines per SPCC plan section 5.2.2 .
- Perform a visual inspection of the recovery pumps, air stripper, storage tanks, pipelines, infiltration trenches and associated ancillary equipment.

Monthly

- Record the water levels and product thickness in wells GBR-7, 8, 10, 13, 15, 17, 19, 21, 22, 24, 25, 33 and all GRW wells.
- Measure specific conductivity from well ~~GBR-14~~ ~~GRW-13.~~⁵
- Sample the air stripper influent and effluent for VOC's (601/602), major cations and anions, ~~PAH's~~ and TDS.
- All diversion and containment berms will undergo monthly visual inspection to ensure integrity per SPCC plan section 7.2.

Quarterly

- Measure and record water levels and product thickness for all wells.
- Analyze for VOC's (601/602), major cations and anions, ~~WQCC~~ PAH's and TDS (EPA 160.1) at wells GBR- ~~6, 8, 13,~~ 15, 24D, 33, 44,⁵ 17, 30, 31, ~~GRW-3, 4, 6 and 13.~~⁵

Annually

Prior to initial discharge and on an annual basis thereafter Giant will:

- Use EPA methods to analyze representative discharge streams and tanks for WQCC parameters (3-103). Radiochemistry and PCB testing will not be performed.
- Perform hydraulic pressure tests of underground pipelines.
- Perform hydraulic pressure tests of all above- ground piping per SPCC plan section 5.2.2 .
- Perform PAH analysis of ground water samples from wells GBR-15, 24D, 33, 17, 30, 31, GRW-3, 4, 6, and 13.

Prior to discharging from a specific storage tank Giant will:

- Use EPA Method 601/602 to analyze any stored water which is to be discharged without air stripping.

7.2 REPORTING

Giant will prepare semi-annual reports which tabulate:

- Ground-water elevations;
- Product thickness on ground water;
- Quantities pumped;
- Quantities discharged;
- Locations of discharges;
- Relevant field information;
- Analytical results of discharge and ground-water samples; and
- Changes in the plan during the period.

In accordance with WQCC Regulation 1-203, Giant will immediately notify the NMOCD of any unplanned release.

Footnotes

1. Due to the manner in which the recovery system is operated, it is not possible to determine on a well-by-well basis which of a number of tanks is the destination of the pumped water.
2. Volume of the effluent is the same as the influent except what is lost to evaporation. Further, there is insufficient pressure available to operate a meter at this point.
3. See Footnote 1.
4. Giant has never used tank 23 in its remediation program and has no intention of doing so in the future.
5. The name of Well GBR-14 has been changed to GRW-13 to indicate it is a recovery well. (All recovery wells are now designated by the prefix GRW).