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REPORTS

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Safety & Environmental

Solutions, Inc.

KOCH PIPELINE CO., L.P.
Crouch Station

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Environmental Bureau
Oil Conservation Division

Work Plan
Installation of Monitor Wells
Lea County, New Mexico

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Purpose

The purpose of this Work Plan is to propose installation of additional monitor wells at the Crouch Station in Section 18 Township 18S Range 36E in Lea County, New Mexico. (See Vicinity Map)

Background

This plan is in response to the August 14, 1997 and March 4, 1998 letters from the New Mexico Oil Conservation Division which requires Koch Pipeline Co., L.P. to submit a work plan to determine the extent of ground water contamination at the Crouch Station site.

Method

Koch Pipeline Co., L.P. proposes to install two (2) monitor wells down-gradient at the property line at Crouch Station and two (2) monitor wells up-gradient to assure no negative impact from historical spills of other origin. The groundwater flow at this location is from the northwest to the southeast. The proposed down gradient monitor wells will be located southeast of the two existing monitor wells, approximately one hundred fifty five feet (155'), at the fence line, and spaced slightly to the northeast and slightly to the southwest. The up-gradient wells will be spaced similarly to the northeast and southwest approximately 150 feet to the northwest of the existing monitor wells.

The purpose of the downgradient wells will be twofold; to determine the extent of ground water contamination down gradient from the leak site (See Site Plan) and to monitor the performance of the SVE unit at the Crouch Station. The up-gradient wells will be installed to insure water quality of influent water from the aquifer and that no contamination to the aquifer has occurred to the aquifer from historical spills from other sources up gradient.

The physical description of the monitor well installations are as follows:

> The wells will be drilled to a depth of ten (10) feet below the water table. Split spoon samples will be collected at ten (10) foot intervals and analyzed in the field for with a PID. All samples collected will be preserved. The sample with the highest field reading will be sent for third party testing for TPH and BTEX confirmation tests. A driller's log noting sample points and changes in lithology will be kept. The wells will be cased with 2" PVC pipe with a minimum of fifteen (15) feet of well screen on the bottom, five (5) feet above the water table and ten (10) feet below the water table. Screen will be gravel packed to a point 2-3 feet above the screen, with a bentonite plug set above the gravel pack. The remainder of the casing annulus to surface will be grouted with cement containing 5% bentonite. The wells will be equipped with a locking well cap. (See monitor well diagram)

Monitoring Parameters

The monitor wells will initially be sampled and analyzed for BTEX, polynuclear aromatic hydrocarbons (PAH), New Mexico Water Quality Control Commission (WQCC) metals; total dissolved solids (TDS); major cations and anions, and results filed with the OCD Santa Fe and Hobbs District offices.

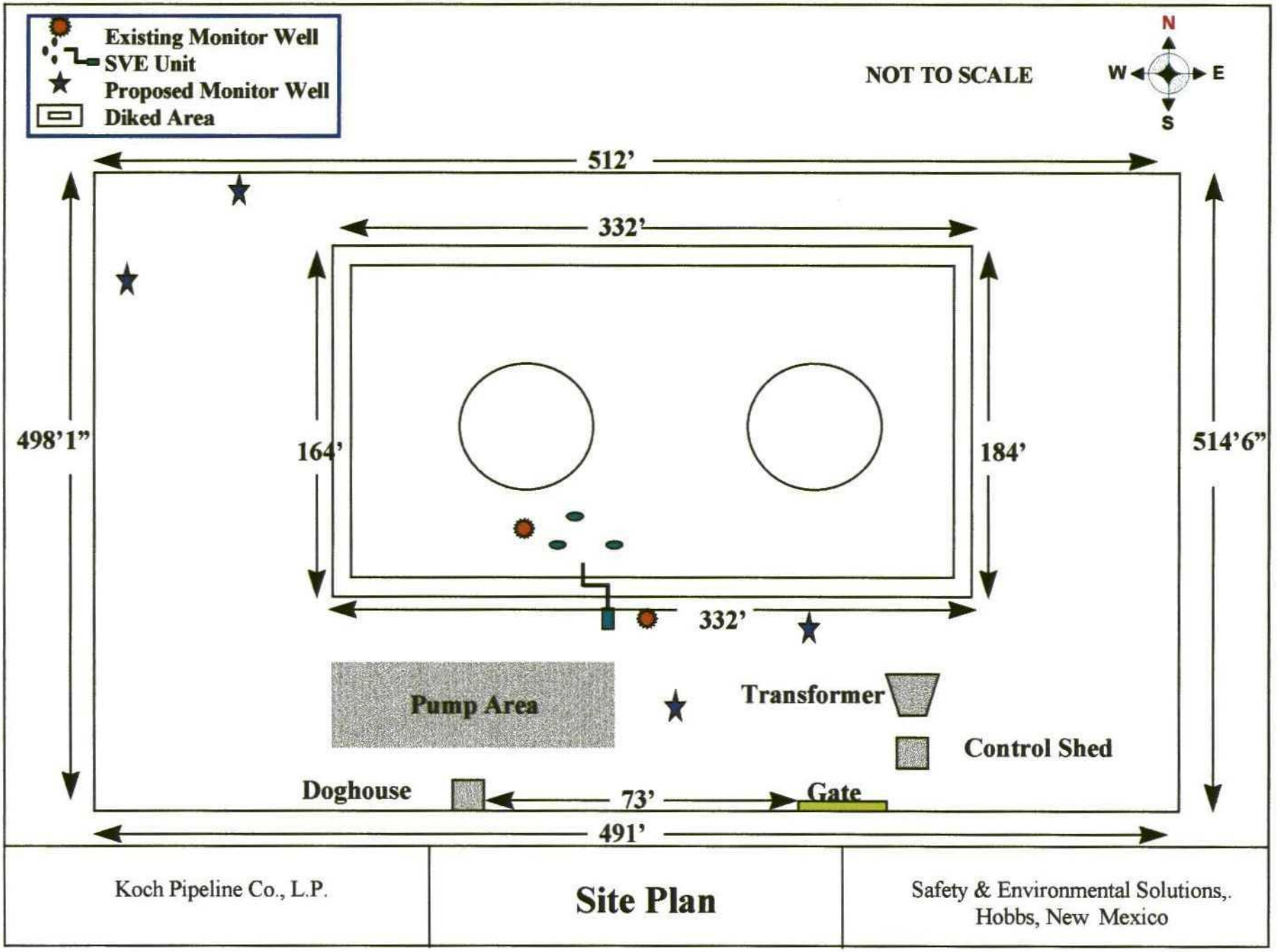
Alternate Work Plan

Prior to the commencement of the primary work plan, the two existing groundwater monitor wells will be sampled in order to determine the extent, if any, of contamination to the groundwater in the leak site area.

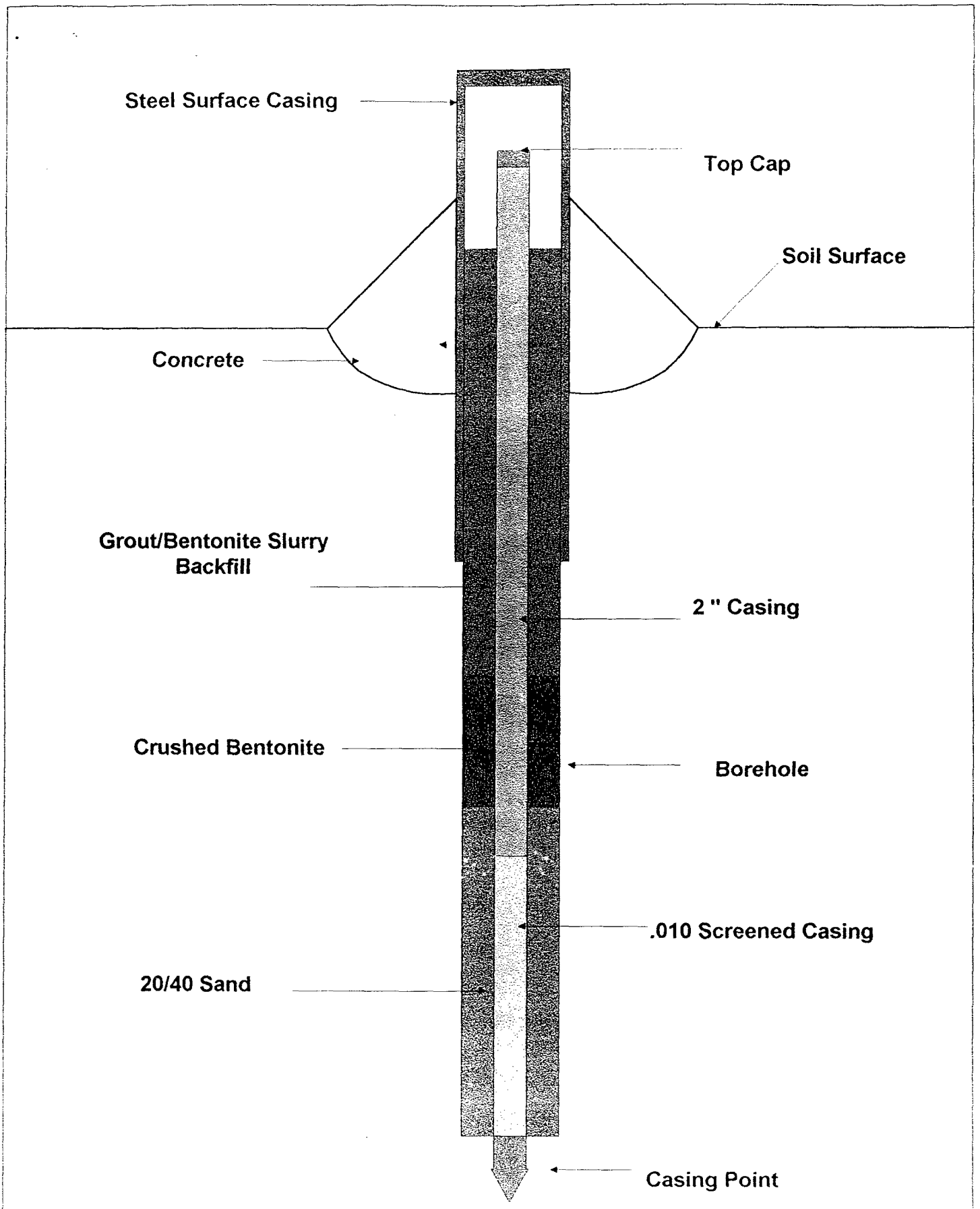
In the event that the results should show contaminate levels below the NMWQCC regulatory limits, we propose that only one monitor well be installed down gradient. That well will be installed in a manner that will facilitate the determination of the water gradient under the spill area and confirm the level of contamination present in the groundwater.

Maps and Figures

Site Plan
Groundwater Monitor Well Diagram



Koch Pipeline Co., L.P.	**Site Plan**	Safety & Environmental Solutions,. Hobbs, New Mexico


Steel Surface Casing
Top Cap
Soil Surface
Concrete
Grout/Bentonite Slurry
Backfill
2 " Casing
Crushed Bentonite
Borehole
.010 Screened Casing
20/40 Sand
Casing Point